

interzone

JULY 2000

NUMBER 157

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plus new fiction by

Roy Gray

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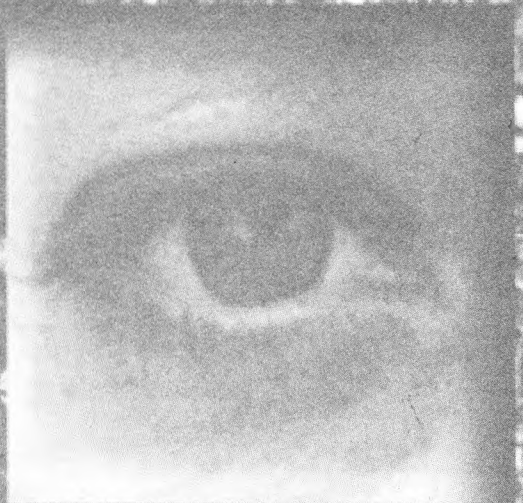
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interzone

science fiction & fantasy

JULY 2000

Number 157

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Dear Editors:

In issue 155 your reviewer Tom Arden wrote: "... it's always sf that produces the hip, cutting-edge stuff, pushing back the frontiers of fiction..." He followed up by saying: "I suspect this is no longer a tenable view – if it ever was..."

He's not kidding! Can anyone name a single sf novelist to have emerged in the last decade who could realistically be called hip and cutting-edge? This is not a rhetorical question – I'd really like to know. Maybe I'm now too old and out-of-touch, maybe I'm just missing out on the new names. Has the supremely tenable really become untenable?

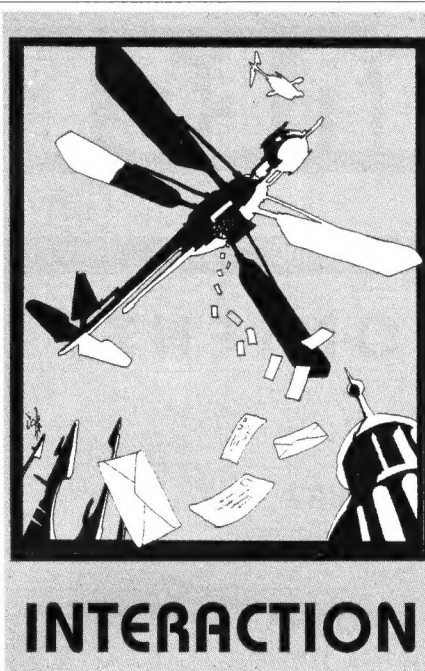
Twenty or so years ago I could easily have reeled off several names – people like Samuel Delany, Philip K. Dick, Harlan Ellison, J. G. Ballard, etc. Ten or so years ago I could have mentioned William Gibson, Bruce Sterling, John Shirley, Rudy Rucker, etc. If really pressed, nowadays, I might proffer Neal Stephenson, Paul Di Filippo, Vernor Vinge or Simon Ings. The trouble is, they aren't any longer especially new, or, any longer, especially fresh. They've all been around for years.

Today's superstars are people like Stephen Baxter and Peter F. Hamilton – the new Arthur C. Clarke or the new Isaac Asimovs, showing more in common with, say, a David Brin than, say, a Brian Aldiss. Worthy, but definitely not hip or cutting-edge.

So, does anyone out there know where I can lay my hands on the good stuff, the hip and cutting-edge science fiction?

Arthur Straker
London

Editor: What? – no Jeff Noon, no Steve Aylett, nor the guy (admittedly a fantasist rather than an sf writer) whose book Tom Arden was actually reviewing, China Miéville? (Tom Arden himself might be regarded as a hip new fantasist by some, and we could name quite a few other Interzone contributors... but no, we shall desist.) "Hip" and "cutting-edge" are slippery terms, and their meaning and value are notoriously in the eye of the beholder. Our perceptions of time can also be deceptive. "Twenty or so years ago" (you're talking about circa 1980) authors like Delany, Dick, Ellison and Ballard had already, as you put it when referring to more recent writers, "been around for years" (those four made their names in the 1960s, and three of them had actually begun their careers in the 1950s). Which is not to say they were not still doing good work in 1980 – and are not doing good work even now, in the cases of the three who still live. J. G. Ballard, for example, may be in his late 60s, but his latest (forthcoming) novel sounds hip and cutting-edge to me. Here's the publisher's description from the



Amazon.com UK website:

"Super-Cannes, by J. G. Ballard (HarperCollins/Flamingo, September 2000), tugs us irresistibly towards the terrifyingly logical destination to which our turn-of-the-century super-capitalism must take us. Paul Sinclair is calm, sane and curious. He and his bright new young wife Jane glide down to the South of France in his vintage Jaguar

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so that she can take up a post as doctor to the surging, shining community of Eden-Olympia, just above Cannes. Transnational capitalism's most dynamic corporations and their swiftest, sharpest executives have converged gleefully on Eden-Olympia, tempted by its location and facilities, by its efficiency and its security, and by something altogether less definite. According to its resident psychologist, Wilder Penrose, the community is 'a huge experiment in how to hothouse the future... an ideas laboratory for the new millennium.' In such a place, he claims, one is absolutely free, free to 'board the escalator of possibility.' Jane does just that. But Paul hesitates before boarding, pausing to look around. He finds what he sees mystifyingly unsettling; when he learns that he and his wife have been housed in a villa whose previous occupant had been driven to massacre notable executives on a horrific shooting spree, he is bound to look under the surface of his new surroundings. For all the dawn-to-dusk hard work being done, for all its productivity and profits, Eden-Olympia is, it would seem, the venue for games of the most serious sort. So Paul joins in... J. G. Ballard has again brought his powers of discovery and dissent to a tale as pacy, gripping and illuminating as his previous bestseller. Super-Cannes follows where our executive super-capitalist dreams of utopia must lead..."

Perhaps others would like to nominate some cutting-edge examples by younger writers, whether sf or "mainstream sf" (i.e., sf not necessarily labelled as such, like the above example)?

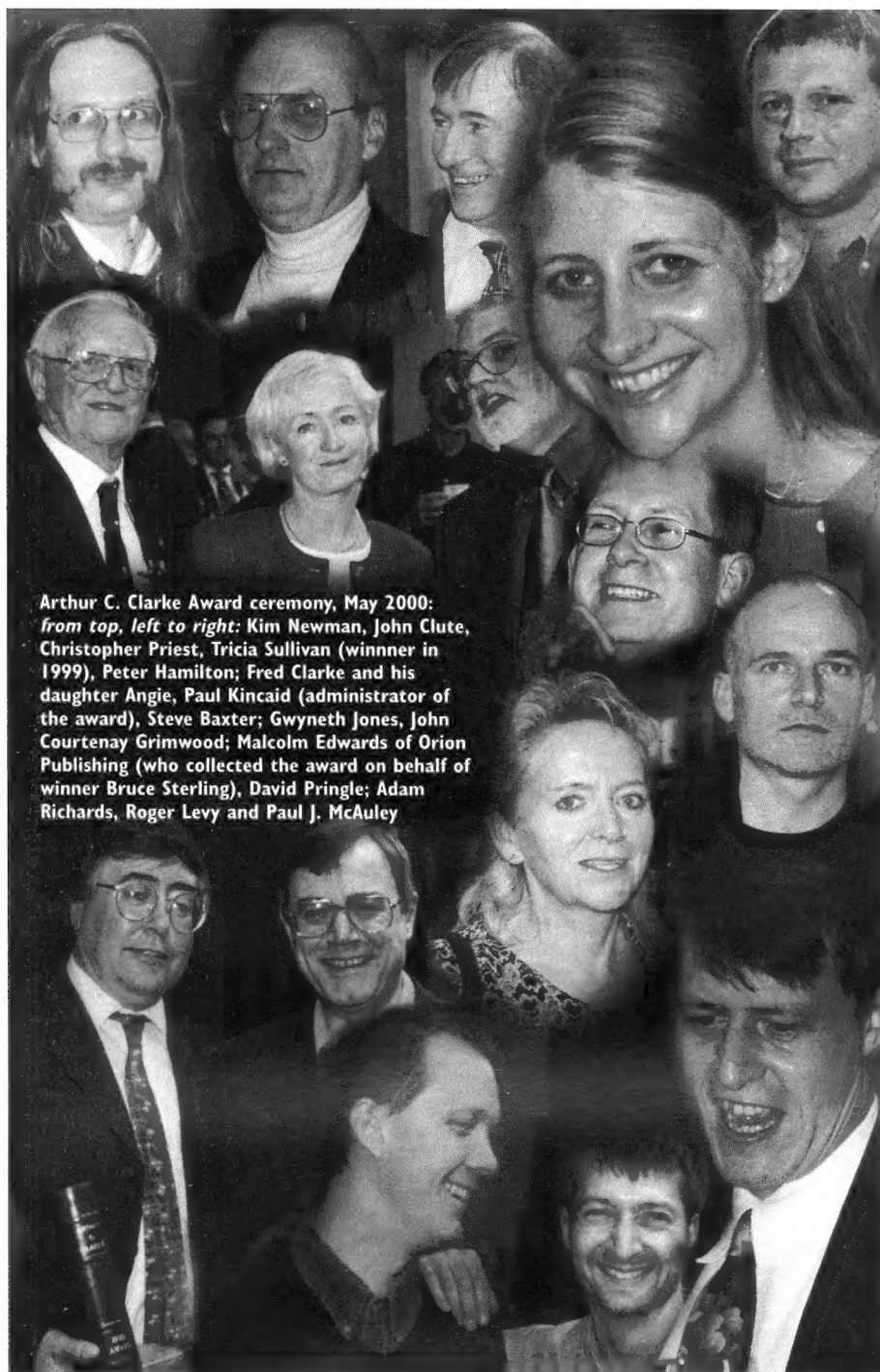
Dear Editors:

I may be a bit late in commenting on Gary Westfahl's article in IZ 153, "The Sound of the City... and the Call of the Cosmos." As guitarist and songwriter in a fledgling hard-rock band, I can confirm that not many people are particularly struck with the idea of combining science fiction and rock – if the dodgy albums Gary mentions were the only examples available, I'd probably agree.

However... Even ignoring the wealth of classic tracks bearing the sf thumbprint (how about Black Sabbath's "Iron Man," "Spiral Architect" or "Symptom of the Universe"? Anthrax's "Black lodge"? Metallica's "Through the never"?), there are more recent examples of the crossover.

For example, I can recommend Fear factory's "Obsolete," a hardcore metal concept album which takes the form of a soundtrack for an unmade film whose screenplay is reproduced on the inlay. A concoction of brutal detuned guitars and roared vocals, it suits the grim sub-ject matter – the final takeover by intelligent machines – perfectly.

As a lighter alternative, Rob Zombie



Arthur C. Clarke Award ceremony, May 2000: from top, left to right: Kim Newman, John Clute, Christopher Priest, Tricia Sullivan (winner in 1999), Peter Hamilton; Fred Clarke and his daughter Angie, Paul Kincaid (administrator of the award), Steve Baxter; Gwyneth Jones, John Courtenay Grimwood; Malcolm Edwards of Orion Publishing (who collected the award on behalf of winner Bruce Sterling), David Pringle; Adam Richards, Roger Levy and Paul J. McAuley

has been peddling his particular brand of cartoon metal for some time, both as a solo artist and with his previous band White Zombie (who, lest we forget, recorded songs called "I am Legend" and "More Human Than Human"). His debut solo album, *Hellbilly Deluxe*, is pretty much more of the same – loud, loud guitars, B-movie inspired lyrics – but none the worse for it. (Incidentally, Rob gets bonus points for having songs featured in *The Matrix*, *Judge Dredd* and *Escape from L.A.*, among others.)

The jewel in the crown for the discerning rock fan is *Powertrip* by Monster Magnet, who have made space rock a career and not, as Gary would have it, an unfortunate phase. Front-

man and songwriter Dave Wyndorf welds vast distorted guitar riffs, freaky noises and downright strange lyrics into a sound that, in a more perfect world, would replace Steps on stereos across the country. For heads-down, shape-throwing air guitar, the tracks of choice have to be "Crop Circle," "Bummer" and the majestic "Space Lord"; but for sheer science-fictional brainfreeze, "Baby Götterdämmerung" takes some beating. Eschewing the chug and roar found elsewhere on the album, the song relies on Dave's voice and lyrics. ("The movie's on again/ They got me nullifying ghosts.") It never fails to raise the neck hairs.

All of which makes me think that the

next time our singer rejects some lyrics for being a load of Buck Rogers toss, it might just be the lyrics that are the problem and not the subject matter. Science-fiction rock does exist; perhaps if Gary were to try some of the good stuff, he might not be so quick to write it off.

Paul Birkett

Barton on Humber, N. Lincolnshire

Dear Editors:

Can someone explain to me why a World War II spy story ("H.M.S. Habakkuk" by Eugene Byrne, *Interzone* 155) was included in a science-fiction magazine? Thanks.

Carol Wilkes

Ealing, London

CarolP90@hotmail.com

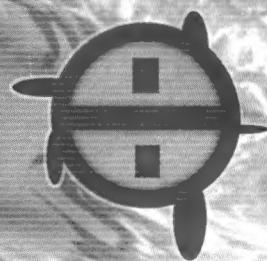
Editor: Hah! Well, it was an alternate-world story, although of a fairly subtle sort. The unusual technologies mentioned in the narrative were real (in drawing-board terms, at least) but were not actually brought to fruition during the World War II of our timeline. Besides, whether it was clearly sf or not, we thought it was a good, gripping story.



SMS and Eira were married recently. SMS is the creator of our editorial vignettes, and many past covers and interior illustrations; Eira is his longtime companion and model.

HIDEAWAY

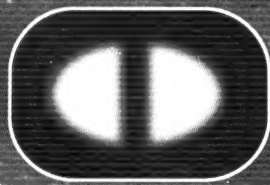
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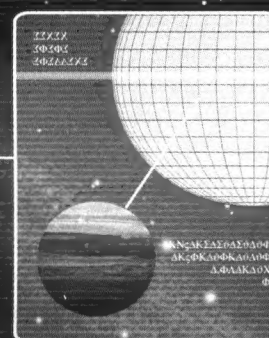
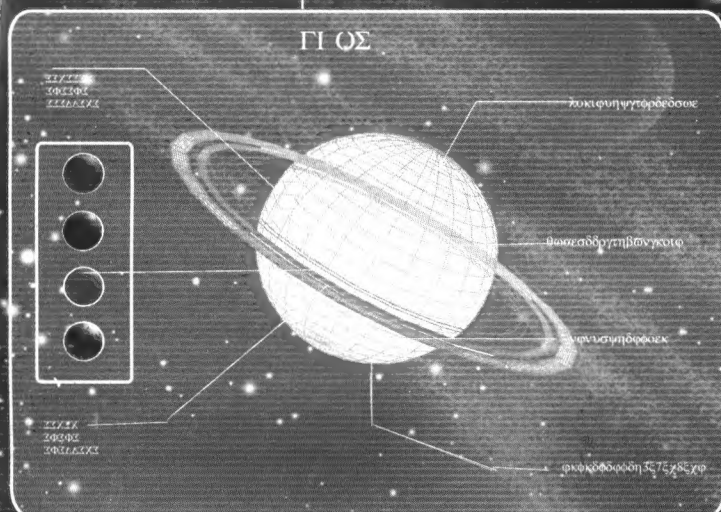
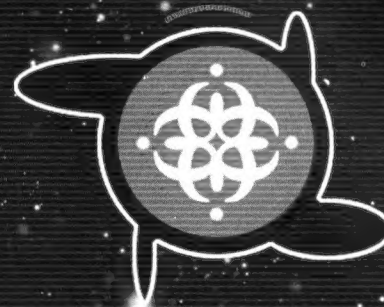
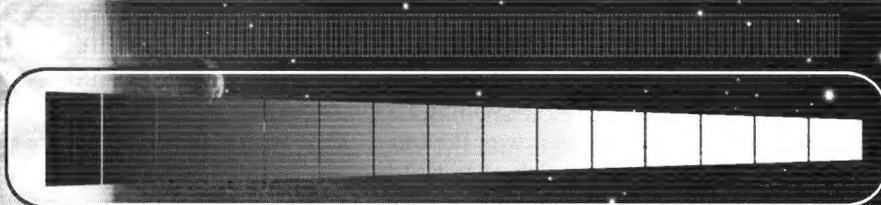
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D.E.H. '00



+ + + + + PART ONE + + + + +

There was, Merlin thought, a very fine line between beauty and terror. Most certainly where the Way was concerned. Tempting as it was to think that the thing they saw through the cutter's windows was only a mirage, there would always come a point when the mysterious artefact known as the syrnix started purring, vibrating in its metal harness. Somehow it was sensing the Way's proximity, anxious to perform the function for which it had been designed.

It seemed to bother all of them except Sayaca.

"Krasnikov," she mouthed, shaping the unfamiliar word like an oath.

She was the youngest and brightest of the four disciples who had agreed to accompany Merlin on this field trip. At first the others had welcomed her into Merlin's little entourage, keen to hear her insights on matters relating to the Way and the enigmatic Waymakers. But in the cutter's cramped surroundings Sayaca's charms had worn off with impressive speed.

"Krasnikov?" Merlin said. "Sorry, doesn't mean anything to me either." He watched as the others pulled faces. "You're going to have to enlighten us, Sayaca."

"Krasnikov was..." she paused. "Well, a human, I suppose – tens of kiloyears ago, long before the Waymakers, even before the Flourishing. He had an idea for moving faster than light; one that didn't involve wormholes or tachyons."

"It can't work, Sayaca," said a gangly, greasy-scalped adolescent called Weaver. "You can't move faster than light without manipulating matter with negative energy density."

"So what, Weaver? Do you think that would have bothered the Waymakers?"

Merlin smiled, thinking that the trouble with Sayaca was that when she made a point

it was almost always a valid one.

"But the Way doesn't actually allow faster-than-light travel," said one of the others. "That much we do know."

"Of course. All I'm saying is that the Waynet might have been an attempt to make a network of Krasnikov tubes which didn't quite work out the way the builders intended."

"Mm," Merlin said. "And what exactly is a Krasnikov tube?"

"A tube-shaped volume of altered spacetime, light-years from end to end. Just like one branch of the Waynet. The point was to allow round-trip journeys to other star systems in arbitrarily short objective time."

"Like a wormhole?" Weaver asked.

"No; the mathematical formulation's utterly different." She sighed, looking to Merlin for moral support. He nodded for her to continue, knowing that she had already alienated the others beyond any reasonable point of return. "But there must have been a catch. It's clear that two neighbouring Krasnikov tubes running in opposite directions violate causality. Perhaps when that happened..."

"They got something like the Waynet?"

Sayaca nodded to Merlin. "Not a static tube of restructured spacetime, but a rushing column of it, moving at a fraction below light-speed. It was still useful, of course. Ships could slip into the Way, cross interstellar space at massive tau factors, and then decelerate instantaneously at the other end simply by leaving the stream."

"All very impressive," Weaver said. "But if you're such an expert, why can't you tell us how to make the syrx work properly?"

"You wouldn't understand if I did," Sayaca said.

Merlin was about to intervene – tension was one thing, but he could not tolerate an argument aboard the cutter – when his glove rescued him. It had begun tickling the back of his hand, announcing a private call from the mothership. Relieved, he unhitched from a restraint harness and kicked himself away from the four adolescents. "I'll be back shortly," he said. "Try not to strangle each other, will you?"

The cutter was a slender craft only 40 metres long, so it was normal enough that tempers had become frayed in the four days that they had been away from the *Starthroat*. The air smelled edgy too; thick with youthful pheromones he did not remember from the last trip. The youngsters were all getting older; no longer his unquestioning devotees.

He pushed past the syrx. It sat within a metal harness, its long axis aligned with the ship's. The conic device was tens of thousands of years old, but its matte-black surface was completely unmarred. It was still purring, too, like a well-fed cat. The closer they got to the Way, the more it would respond. It wanted to be set free, and shortly – Merlin hoped – it would get its wish.

The seniors would not be pleased, of course.

Beyond the syrx was a narrow, transparent-walled duct which led back to Merlin's private quarters. He kicked himself along the passage, comfortable in free-fall after four days of adaptation. The view was undeniably impressive; as always he found himself slowing to take it in.

The stars were clumped ahead; shifted from their real positions and altered in hue and brightness by the aberration caused by the cutter's motion. They were moving at nine tenths of the speed of light. Set against this distorted starfield, far to one side, was the huge swallowship – the *Starthroat* – which Merlin's people called home. The swallowship was far too distant to see as anything other than a prick of hot blue light pointing aft, like a star which had been carelessly smudged. Yet apart from the four people with him here, every other human he knew was inside *Starthroat*.

And then there was the Way.

It lay in the opposite hemisphere of the sky, stretching into the infinite distance fore and aft. It was like a ghostly pipeline alongside which they were flying – a pipeline 10,000 kilometres thick and thousands of light-years long. It shimmered faintly – twinkling as tiny particles of cosmic debris annihilated themselves against its skin. Most of those impacts were due to dust specks which only had rest velocities of a few kilometres a second against the local stellar rest frame – so the transient glints seemed to slam past at eye-wrenching velocities. Not just a pipeline, then – but a glass pipeline running thick with twinkling fluid which flowed at frightening speed.

And perhaps soon they would relearn the art of riding it.

He pushed into his quarters, confronting his brother's image on the comms console. Although they were not twins – Gallinule was a year younger – they still looked remarkably alike. It was almost like looking in a mirror.

"Well?" Merlin said.

"Trouble, I'm afraid."

"Let me guess. It has something to do with Quail."

"Well, the captain's not happy, let's put it like that. First you take the syrx without authorization, then the cutter – and then you have the balls not to come back when the old bastard tells you." The face on the screen was trying not to smile, but Merlin could tell he was quietly impressed. "But that's not actually the problem. When I say trouble I mean for all of us. Quail wants all the seniors in his meeting room in eight hours."

Just time, Merlin thought, for him to drop the syrx and make it back to *Starthroat*. Not as good as having time to run comprehensive tests, but still damnably tempting. It was almost suspiciously convenient.

"I hadn't heard of any crisis on the horizon."

"Me neither, and that's what worries me. It's something we haven't thought of."

"The Huskers stealing a lead on us? Fine. I expect to be comfortably senile by the time they get within weapons range."

"Just be there, will you? Or there'll be two of us in trouble."

Merlin smiled. "What else are brothers for?"

The long, oval meeting room was hundreds of metres inside *Starthroat*'s armoured hull. Covered in a richly detailed fresco, the walls enclosed a hallowed mahogany table of ancient provenance. Just as the table's extremities now sagged with age, time had turned the fresco dark and sepia. In one corner a proctor was slowly ren-

ovating the historic artwork, moving with machine diligence from one scene of conflict to another, brightening hues, sharpening brush-strokes that had become indistinct with age.

Merlin squeezed past the squat machine.

"You're late," Quail said, already seated. "I take it your trip was a fruitful one?" Merlin started to compose an answer, but Quail was already speaking again. "Good. Then sit down. You may take it as a very bad omen that I am not especially minded to reprimand you."

Wordlessly Merlin moved to his own chair and lowered himself into it.

What could be that serious?

In addition to the gaunt, grey-skinned Captain, there were 15 ship seniors gathered in the chamber. Apart from Merlin they were all in full ceremonial dress; medals and sigils of rank to the fore. This was the Council: the highest decision-making body in the ship save for Quail himself. One senior for every dozen sub-seniors, and one sub-senior for every hundred or so crewmembers. These 15 people represented somewhat less than 15,000 others, working, relaxing or sleeping elsewhere in the swallowship's vast confines. And much of the work that they did was concerned with tending the 200,000 people in frost-watch; frozen refugees from dozens of systems. The burdens of responsibility were acute; especially so given that the swallowship had encountered no other human vessel in centuries. No one became a senior by default, and all those present – Merlin included – had earned the right to sit with Quail. Even, Merlin thought, his enemies on the Council. Like Pauraque, for instance. She was a coldly attractive woman who wore a stiff-necked black tunic, cuffs and collar edged in complicated black filigrees. She tapped her fingers against the table's ancient wood, black rings clicking together.

"Merlin," she said.

"Pauraque. How are you?"

She eyed him poisonously. "Reports are that you took one of the final two syrinxes without the express authorization of the Council Subdivision for Waynet Studies." Merlin opened his mouth, but Pauraque shook her head crisply. "No; don't even think of weaseling out of it. I'll see that this never happens again. At least you brought the thing back unharmed this time... didn't you?"

He smiled. "I didn't bring it back at all. It's still out there, approaching the Way." He showed Pauraque the display summary on the back of his glove. "I put it aboard an automated drone."

"If you destroy it..." Pauraque looked for encouragement at the doleful faces around her. "We'll have you court-martialled, Merlin... or worse. It's common knowledge that your only reason for studying the syrinxes is so that you can embark on some ludicrous quest..."

Quail coughed. "We can discuss Merlin's activities later, Pauraque. They may seem somewhat less pressing when you've heard what I have to say." Now that he had their attention, the old man softened his tone of voice until it was barely a murmur. "I'm afraid I have remarkably bad news."

It would have to be, Merlin thought.

"For as long as some of us remember," Quail said, "one

central fact has shaped our lives. Every time we look to stern, along the way we've come, we know that *they* are out there, somewhere behind us. About 30 light years by the last estimate, but coming steadily closer by about a light year for every five years of shiptime. In a century and a half we will come within range of their weapons." Quail nodded toward the fresco; one particularly violent tableau which showed ships exchanging fire above a planet garlanded in flames. "It won't be pretty. At the best, we might take out one or two elements of the swarm before they finish us. Yet we live with this situation, some days hardly giving it more than a moment's thought, for the simple reason that it lies so far in our future. The youngest of us may live to see it, but I'll certainly not be among them. And, of course, we cling to the hope that tomorrow will offer us an escape route we can't foresee today. Better weapons, perhaps – or some new physics which enables us to squeeze a little more performance from our engines, so that we can outrun the enemy."

True enough. This was the state of things that they had known for years. It was the reality which had underpinned every waking thought for just as long. No one knew much about the Huskers except that they were ruthless alien cyborgs from somewhere near the Galaxy's centre. Their only motive seemed to be the utter extermination of humanity from all the niches it had occupied since the Flourishing. This they prosecuted with glacial patience, in a war that had already lasted many kiloyears.

Quail took a sip of water before continuing. "Now I must disclose an alarming new discovery."

Stars winked into existence above the table: hundreds and then thousands of them, strewn in lacy patterns like strands of seaweed. They were looking at a map of the local stellar neighbourhood – a few hundred light years in either direction – with the line of the Way cutting through it like a blue laser. The swallowship's position next to the Way was marked, as was the swarm of enemy ships trailing it.

And then a smudge of radiance appeared far ahead, again near the Way.

"That's the troubling discovery," Quail said.

"Neutrino sources?" Merlin said, doing his best to convince the room that his attention was not being torn between two foci.

"A whole clump of them in our path, about 100 light years ahead of us. Spectroscopy says they're more or less stationary with respect to the local stellar neighbourhood. That means it isn't a swarm coming to intercept us from the front – but I'm afraid that's as good as the news gets."

"Husker?" said Gallinule.

"Undoubtedly. Best guess is we're headed straight toward a major operational concentration; hundreds of ships; the equivalent of one of our motherbases or halo manufactories. Almost certainly armed to the teeth and in no mood to let us slip past unchallenged. In short, we're running from one swarm toward another which happens to be even larger."

Silence while the seniors – including Merlin – digested this news.

"Well, that's it then," said another senior, white

bearded, bald Crombec, who ran the warcreches. "We've got no choice but to turn away from our current path."

"Tactically risky," Gallinule said.

Crombec rubbed his eyes, red with fatigue. Evidently he had been awake for some time – perhaps privy to this knowledge longer than the others, grappling with the options. "Yes. But what else can we do?"

"There is something," Merlin said. As he spoke he saw the status read-out on his glove change; the sensors racked around the syrinx finally recording some activity. Considering what he was about to advocate, it was ironic indeed. "A crash programme to achieve Way-capability. Even if there's an ambush ahead, the Huskers won't be able to touch a ship moving in the Way."

Pauraque scoffed. "And the fact that the Cohort's best minds have struggled with this problem for kiloyears in no way dents your optimism?"

"I'm only saying we'd have a better than zero chance."

"And I suppose we could try and find this super-weapon of yours while we're at it?"

"Actually," said Quail, raising his voice again, "there happens to be a third possibility; one that I haven't drawn your attention to yet. Look at the map, will you?"

Now Quail added a new star – one that had not been displayed before. It lay directly ahead of them; only a few tens of light-years from their current position. As they moved their heads to establish parallax, they all saw that the star was almost exactly aligned with the Way.

"We have a chance," he said. "A small one, but very much better than nothing. This system has a small family of worlds; a few rocky planets and a gas giant with moons. There's no sign of any human presence. In nearly every respect there's nothing remarkable about this place. Yet the Way passes directly through the system. It might have been accidental... or it might have been the case that the Waymakers wanted to have this system on their network."

Merlin nodded. Extensive as the Waynet was, it still only connected around ten million of the Galaxy's stars together. Ten million sounded like a huge number, but what it meant was that for every single star on the network there were another 40,000 which could only be reached by conventional means...

"How far away?" he said.

Quail answered. "Without altering our trajectory, we'll reach it in a few decades of worldtime whatever we do now. Here's my suggestion. We decelerate, stop in the system and dig ourselves in. We'll still have 30 years before the Huskers arrive. That should give us time to find the best hiding places and to camouflage ourselves well enough to escape their detection."

"They'll be looking for us," Crombec said.

"Not necessarily." He made a gesture with his hands, clasping them and then drawing them slowly apart. "We can split *Starthroat* into two parts. One will continue moving at our current speed, with its exhaust directed back toward the Huskers. The other, smaller part will decelerate hard – but it'll be directing its radiation away from the aliens. We can fine-tune the beam direction so

that the swarm ahead of us doesn't see it either."

"That's... ambitious," Merlin said. He had his gloved hand under the table now, not wanting anyone else to see the bad news which was spilling across it. "If hiding's your style."

"It's no one's style... just our only rational hope." Quail looked around the room, seeming older and frailer than any captain ought to be; rectangles of shadow etched beneath his cheekbones.

Crombec spoke up. "Captain? I would like to take command of any part of the ship that remains in flight."

There were a few murmurs of assent. Clearly Crombec would not be alone in preferring not to hide, even if the majority might choose to follow Quail.

"Wait," Pauraque said. "As soon as we put people on a decoy, with knowledge of what has happened earlier, we run the risk of the Huskers eventually learning it all for themselves."

"We'll take that risk," Quail snapped.

"There won't be one," said Crombec. "You have my word that I'll destroy my ship rather than risk it falling into Husker possession."

"Merlin?" the Captain asked. "I take it you're with us?"

"Of course," he said, snapping out of his gloomy reverie. "I support your proposal fully... as I must. Doubtless we'll have time to completely camouflage ourselves and cover our tracks before the swarm comes past. There's just one thing..."

Quail rested his head to one side against his hand, like a man close to exhaustion. "Yes?"

"You said the system was almost unremarkable... is it simply the presence of the Waynet which makes it otherwise?"

"No," Quail said, his patience wearing fatally thin. "No... there was something else – a small anomaly in the star's mass-luminosity relationship. I doubt that it's anything very significant. Look on the bright side, Merlin. Investigating it will give you something to do while the rest of us are busying ourselves with the boring work of concealment. And you'll have your precious syrinxes, as well – not to mention close proximity to the Waynet. There'll be plenty of time for all the experiments you can think of. I'm sure even you will be able to make two syrinxes last long enough..."

Merlin glanced down at his glove again, hoping that the news he had received earlier had in some way been in error, or his eyes had deceived him. But neither of those things proved to be the case.

"Better make that one," he said.

Naked, bound together, Sayaca and Merlin seemed to float in space, kindling a focus of human warmth between them. The moment when the walls of the little ship had vanished had been meant to surprise and impress Sayaca. He had planned it meticulously. But instead she began to shiver, though it was no colder than it had been an instant earlier. He traced his hand across her thigh, feeling her skin break into bumps.

"It's just a trick," he said, her face half-buried in his chest. "No one can see us from outside the cutter."

"Force and wisdom; it feels so cold now, Merlin. Makes me feel so small and vulnerable, like a candle on the point of flickering out."

"But you're with me."

"It doesn't make any difference, don't you understand? You're just a man, Merlin – not some divine protective force."

Grudgingly, but knowing that the moment had been spoiled, Merlin allowed the walls to return. The stars were still visible, but there was now quite clearly a shell of transparent metasapphire to hold them at bay, laced with control graphics.

"I thought you'd like it," he said. "Especially now, on a day like this one."

"I just wasn't quite ready for it, that's all." Her tone shifted to one of reconciliation. "Where is it, anyway?"

Merlin issued another subvocal command to the ship, instructing it to distort and magnify the starfield selectively, until the object of Sayaca's interest sprang into focus. What they saw was the swallowship splitting into two uneven parts, like an insect undergoing some final, unplanned metamorphosis. Six years had passed since the final decision had been taken to implement Quail's scheme. Sayaca and Merlin had become lovers in that time; Quail had even died.

The separation would have been beautiful, were so much not at stake. *Starthroat* did not exist any more. Its rebuilding had been a mammoth effort that had occupied all of them in one way or another. Much of its mass had been retained aboard the part which would remain cruising relativistically. She had been named *Bluethroat* and carried roughly one third of the frostwatch sleepers, in addition to Crombec and the small number of seniors and sub-seniors who had chosen to follow him. Needless to say there had been some dispute about Crombec getting most of the weapons, chiefly from Pauraque... but Merlin could not begrudge him that.

The smaller part they had named *Starling*. This was a ship designed to make one journey only; from here to the new system. It was equipped with a plethora of nimble, adaptable in-system craft, necessary for exploring the new system and finding the securest hiding places. Scans showed that a total of six worlds orbited the star they had now named Bright Boy. Only two were of significance: a scorched, airless planet much the same size as fabled Earth which they named Cinder, and a gas giant which they named Ghost. It seemed obvious that the best place to hide would be in one of these worlds, either Cinder or Ghost, but no decision had yet been taken. Sayaca thought Cinder was the best choice, while Pauraque advocated using Ghost's thick atmosphere for concealment. Eventually a choice would be made, they would dig in, establish a base and conceal all evidence of their activities.

The Huskers might slow down, curious – but they would find nothing.

"You were there, weren't you," Sayaca said. "When they decided this."

Merlin nodded – remembering how young she had seemed then. The last few years had aged them all. "We all thought Quail was insane... then we realized even an

insane plan was the best we had. Except for Crombec, of course..."

Bluethroat was separating now; its torch still burning clean and steady, arcing back into the night along the great axis of the Way. Far behind – but less far behind than they had once been – lay the swarm, still pursuing Merlin's people.

"You think Crombec's people will die, don't you?" Sayaca said.

"If I thought he had the better chance, that's where I'd be. With his faction, rather than under Pauraque."

"I thought about following him too," Sayaca said. "His arguments seemed convincing. He thinks we'll all die around Bright Boy."

"Maybe we will. I still think the odds are slightly more in our favour."

"Slightly?"

"There's something I don't like about our destination, Sayaca. Bright Boy doesn't fit into our normal stellar models. It's too bright for its size, and it's putting out far too many neutrinos. If you're going to hide somewhere, you don't do it around a star which stands out from the crowd."

"Would it make any difference if Quail had put you in charge rather than Pauraque? Or if the Council had not forbidden you to test the final syrx?"

Conceivably, he thought, it might well have done. He had been very lucky to retain any kind of seniority after what had happened back then. But the loss of the second syrx had not been the utter disaster his enemies had tried to portray. The machine had still rammed against the Way in a catastrophic manner, but for the first time in living memory, a syrx had seemed to do something else in the instants before that collision... chirping a series of quantum-gravitational variations toward the boundary. And the Way had begun to respond; a strange local alteration in its topology ahead of the syrx. Puckering, until a dimple formed on the boundary, like the nub of a severed branch on a tree-trunk. The dimple was still forming when the syrx hit.

What, Merlin wondered, would have happened if that impact had been delayed for a few more instants? Might the dimple have finished forming, providing an entry point into the Way?

"I don't think it made any difference to me."

"They say you hated Quail."

"I had reasons not to like him, Sayaca. My brother and I both did."

"But they say Quail rescued you from Plenitude; that he saved your lives while everyone else died."

"That's true enough."

"And for that you *hated* him?"

"He should have left us behind, Sayaca. No; don't look at me like that. You weren't there. You can't understand what it was like."

"Maybe if I spoke to Gallinule, he'd have more to say about it." Subtly, she pulled away from him. A few minutes earlier it would have signified nothing, but now that tiny change in their spatial relationship spoke volumes. "They say you're alike, you and him. You look alike, too. But there isn't as much similarity as people think."

+ + + + + PART TWO + + + + +

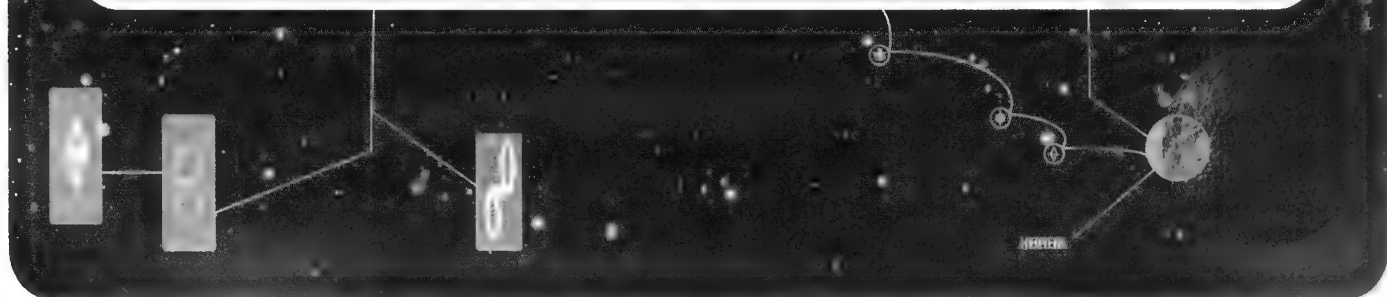
"There are definitely tunnels here," Sayaca said, years later.

Their cutter was parked on an airless plain near Cinder's equator, squatting down on skids like a beached black fish. Bright Boy was almost overhead; a disk of fierce radiance casting razor-edged shadows like pools of ink. Merlin moved over to Sayaca's side of the cabin to see the data she was projecting before her, sketched in ruddy contours. Smelling her, he wanted to bury his face in her hair and turn her face to his before kissing her, but the moment was not right for that. It had not been right for some time.

"Caves, you mean?" Merlin said.

"No, *tunnels*." She almost managed to hide her irritation. "Like I always said they were. Deliberately excavated. Now do you believe me?"

There had been hints of them before, from orbit, during the first months after the arrival around the star. *Starling* had sent expeditionary teams out to a dozen promising niches in the system, tasking them to assess the benefits of each before a final decision was made. Most of the effort was focused around Cinder and Ghost – they had even put space stations into orbit around the gas giant – but there were teams exploring smaller bodies, even comets and aster-



oids. Nothing would be dismissed without at least a preliminary study. There were even teams working on fringe ideas like hiding inside the sun's chromosphere.

And for all that, Merlin thought, they still won't allow me near the other syrinx.

But at least Cinder was a kind of distraction. Mapping satellites had been dropped into orbits around all the major bodies in the system, measuring the gravitational fields of each body. The data, unravelled into a density-map, hinted at puzzling structure within Cinder – a deep network of tunnels riddling the lithosphere. Now they had even better maps, constructed from seismic data. One or two small asteroids hit Cinder every month. With no atmosphere to slow them down, they slammed into the surface at many kilometres per second. The sound waves from those impacts would radiate through the underlying rock, bent into complex wavefronts as they traversed density zones. They would eventually reach the surface again, thousands of kilometres away, but the precise pattern of arrival times – picked up across a network of listening devices studding the surface – would depend on the route that the sound waves had taken.

Now Merlin could see that the tunnels were definitely artificial.

"Who do you think dug them?"

"From here, there's no way we'll ever know." Sayaca frowned, puzzling over something in her data, and then seemed to drop the annoyance, at least for now, rather than have it spoil her moment of triumph. "Whoever it was, they tidied up after themselves. We'll have to go

down – get into them."

"Perhaps we'll find somewhere to hide."

"Or find someone else already hiding." Sayaca looked into his face, her expression one of complete seriousness.

"Maybe they'll let us hide with them."

She turned back to her work. "Or maybe they'd rather we left them alone."

Several months later Merlin buckled on an immersion suit; feeling the slight prickling sensation around the nape of the neck as the suit hijacked his spinal nerves. Vision and balance flickered – there was a perceptual jolt he never quite got used to – and then suddenly he was back in the simulated realm of the Palace. He had to admit it was good; much better than the last time he had sampled Gallinule's toy environment.

"You've been busy," he said.

Gallinule's image smiled. "It'll do for now. Just wait 'til you've seen the sunset wing."

Gallinule led him through the maze of high-ceilinged, baroquely-walled corridors which led from the oubliette to the other side of the Palace. They ascended and descended spiral staircases and crossed vertiginous inner chambers spanned by elegantly arched stonework bridges, delicate subtleties of masonry highlighted in sunset fire. The real Palace of Eternal Dusk had been ruined along with every other sign of civilization when the Huskers had torched Plenitude. This simulation was running in the main encampment inside Cinder, but Gallinule had spread copies of it around the system; wherever he might

need a convenient venue for discussion.

"See anything that looks out of place?" Gallinule said.

Merlin looked around, but there was nothing that did not accord with his own memories. Hardly surprising. Of the two of them, Gallinule had always been the one with the eye for detail.

"It's pretty damned good. But why? And how?"

"As a test-bed. Aboard *Starthroat*, we never needed good simulation techniques. But our lives depend on making the right choices around Bright Boy. That means we have to be able to simulate any hypothetical situation and experience it as if it were totally real."

Merlin agreed. The discovery that the tunnels in Cinder were artificial had enormously complicated the hide-away project. They had been excavated by a hypothetical human splinter group which Sayaca had dubbed the Diggers. No one knew much about them. Certainly they had been more advanced than any part of the Cohort, but while their machines – lining the tunnels like a thick arterial plaque – seemed unfathomably strange, they were not quite strange enough to suggest that they had been installed by the Waymakers. And they were quite clearly human: markings were in a language which the linguists said had ancient links to Main. The Diggers were simply one of the thousands of cultures which had ascended to heights of technical prowess without making any recognizable dent on human history.

"...anyway, who knows what nasty traps the Diggers left us," Gallinule was saying. "With simulations, we'll at least be able to prepare for the more obvious surprises." His youthful image shrugged. "So I initiated a crash programme to resurrect the old techniques. At the moment we have to wear suits to achieve this level of immersion, but in a year or so we'll be able to step into simulated environments as easily as walking from one room to another."

They had reached a balcony on the sunset side of the Palace of Eternal Dusk. He leaned over the balustrade as far as he dared, seeing how the lower levels of the Palace dropped away toward the rushing sea below. The Palace of Eternal Dusk circled Plenitude's equator once a day, travelling with the line that divided day from night. Its motion caused Plenitude's sun to hang at the same point in the sky; two thirds of its swollen disk already consumed by the sea. Somewhere deep in the keel of rock which the Palace rode lay throbbing mechanisms that both sustained the structure's flight – it had been flying for longer than anyone remembered – and generated the protective bubble which held it in a pocket of still air, despite its supersonic velocity relative to the ground.

Merlin's family had held the Palace for 1,300 years, after a short dark age on Plenitude. The family had been among the first to rediscover powered flight, using fragile aircraft to reach the keel. Other contenders had come, but the family had retained their treasure across 40 generations, through another two dark ages.

Finally, however, the greater war had touched them.

A damaged Cohort swallowship had been the first to arrive, arriving ahead of a Husker swarm. The reality of interstellar travel was still dimly remembered on Plen-

itude, but those first newcomers were still treated with suspicion and paranoia. Only Merlin's family had given them the benefit of the doubt... and even then, not fully heeded the warning when it was given. Against their ruling mother's wishes, the two brothers had allowed themselves to be taken aboard the swallowship and inducted into the ways of the Cohort. Their old names were discarded in favour of new ones, in the custom of the swallowship's crew. They learned fluency in Main.

After several months, Merlin and Gallinule had been preparing to return home as envoys. Their plan was simple enough. They would persuade their mother that Plenitude was doomed. That would not be the easiest of tasks, but their mother's co-operation was vital if anything was to be saved. It would mean establishing peace among the planet's various factions, where none had existed for generations. There were spaces in the swallowship's frost-watch holds for sleepers, but only a few hundred thousand, which would mean that each region must select its best. It would not be easy, but there were still years in which to do it. "None of it will make any difference," their mother had said. "No one will listen to us, even if we believe everything Quail says."

"They have to."

"Don't you understand?" she said. "You think of me as your mother, but to 50 million of Plenitude's inhabitants I'm a *tyrant*."

"They'll understand," Merlin said, half believing it himself.

But then the unthinkable had happened. A smaller element of the swarm had crept up much closer than anyone had feared, detected only when it was already within Plenitude's system. The swallowship's captain made the only decision he could, which was to break orbit immediately and run for interstellar space.

Merlin and Gallinule fought – pleaded – but Quail would not allow them to leave the ship. They told him all they wanted was to return home. If that meant dying with everyone else on Plenitude, including their mother, so be it.

He listened, and sympathized, and still refused them. It was not just their genes that the Cohort required, he said. Everything else about them. Their stories. Their hopes and fears. The tiniest piece of knowledge they carried, considered trivial by them, might prove to be shatteringly valuable. It was many decades of shiptime since they had found another pocket of humanity. Merlin and Gallinule were simply too precious to throw away.

Even if it meant denying them the right to die with valour.

Instead, on *Starthroat*'s long-range cameras, relayed from monitoring satellites sown around Plenitude, they watched the Palace of Eternal Dusk die, wounded by weapons it had never known before, stabbing deep into the keel on which it flew, destroying the engines that held it aloft. It came down slowly, grinding into the planetary crust, gouging a terrible scar across half of one scorched continent before it came to rest, ruined and lop-sided.

And now Gallinule had made this.

"If you can do all this now..." Merlin mused. He left the

remark hanging, knowing his brother would take the bait.

"As I said, full immersion in a year or so. Then we'll need better methods to deal with the time-lag for communications around Bright Boy. We even can't broadcast signals for fear of them being intercepted by the Huskers, which limits us to line-of-sight comms between relay nodes sprinkled around the system. Sometimes the routing will add significant delays. That's why we need another kind of simulation. If we can create semblances..."

Merlin stopped him. "Semblances?"

"Sorry. Old term I dug from the troves. Another technique we've forgotten aboard *Starthroat*. We need to be able to make convincing simulacra of ourselves, with realistic responses across a range of likely stimuli. Then we can be in two places at once – or as many as we want to be. Afterwards, you merge the memories gathered by your semblances."

Merlin thought about that. Many cultures known to the Cohort had developed the kind of technology Gallinule was referring to, so the concept was not unfamiliar to him.

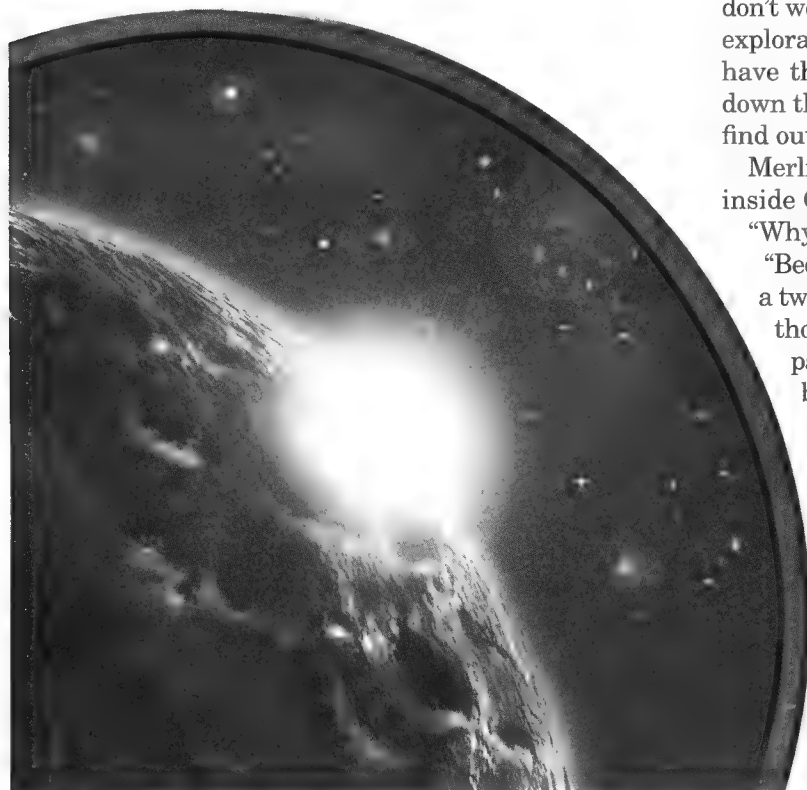
"These wouldn't be conscious entities, though?"

"No; that's far down the line. Semblances would just be mimetic software; clever caricatures. Of course, they'd seem real if they were working well. Later..."

"You'd think of adding consciousness?"

Gallinule looked around warily. It was a reflex, of course – there could not possibly have been eavesdroppers in this environment he had fashioned – but it was telling all the same. "It would be useful. If we could copy ourselves entirely into simulation – not just mimesis, but neuron-by-neuron mapping – it would make hiding from the Huskers very much easier."

"Become disembodied programs, you mean? Sorry, but that's a definite case of the cure being worse than the disease."



"Eventually it won't seem anywhere near as chilling as it does now. Especially when our other options for hiding look less and less viable."

Merlin nodded sagely. "And you'd no doubt do all in your power to make them seem that way, wouldn't you?"

Gallinule shrugged. "If Cinder's tunnels turn out to be the best place to hide, so be it. But it's senseless not to explore other options." Merlin watched the way his knuckle tightened on the stone balustrade, betraying the tension he tried to keep from his voice.

"If you make an issue of this," Merlin said carefully, "you'd better assume I'll fight you, brother or not."

Gallinule touched Merlin's shoulder. "It won't come to a confrontation. By the time the options are in, the correct path will be clear to us all... you included."

"The correct path's already clear to me. And it doesn't involve becoming patterns inside a machine."

"You'd prefer suicide instead?"

"Of course not. I'm talking about something infinitely better than hiding." He looked hard into his brother's face. "You have more influence on the Council than I do. You could persuade them to let me examine the syrxin."

"Why not ask Sayaca the same thing?"

"You know well why not. Things aren't the same between us these days. If you... oh, what's the point." Merlin removed Gallinule's hand from his shoulder. "Nothing that happens here will make the slightest difference to your plans."

"Spare me the self-righteousness, Merlin. It's not as though you're any different." Then he sighed, looking out to sea. "I'll demonstrate my commitment to the cause, if that's what you want. You know that Pauraque's still exploring the possibility of establishing a camouflaged base inside Ghost's atmosphere?"

"Of course."

"What you probably don't know is our automated drones don't work well at those depths. So we're going in with an exploration team, next month. It'll be dangerous, but we have the Council's say-so. We know there's something down there; something we don't understand. We have to find out what it is."

Merlin had heard nothing about anything unexpected inside Ghost, but he feigned knowledge all the same.

"Why are you telling me this?"

"Because I'm accompanying Pauraque. We've equipped a two-person cutter for the expedition, armoured to take thousands of atmospheres of pressure." Gallinule paused and clicked his fingers out to sea, making the blueprints of the ship loom large in the sky, sharp against the dark blue zenith. The blueprint rotated dizzily. "It's nothing too technical. Another ship could be adapted before we go down there. I'd be happy to disclose the mods."

Merlin studied the schematic, committing the salient points to memory.

"This is a goad, isn't it?"

"Call it what you will. I'm just saying that my commitment to the greater cause shouldn't be in any doubt." Another finger click and the phantom ship vanished from the sky. "Where yours fits in is another thing entirely."

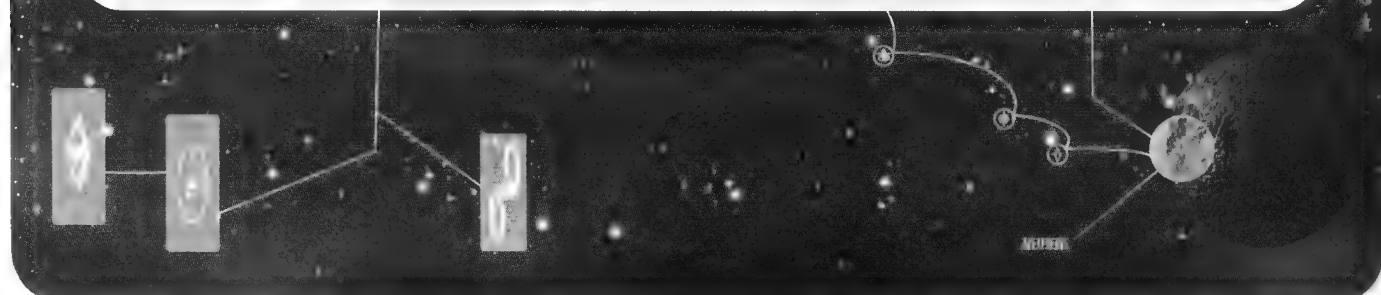
+ + + + + PART THREE + + + + +

For days Ghost had loomed ahead; a fat sphere banded by delicate equatorial clouds, encircled by moons and rings. Now it swallowed half the sky, cloud decks reaching up toward him; constellations of cream and ochre stacked hundreds of kilometres high. His approach was queried by the orbiting stations, but they must have known what the purpose of his visit was. His brother and Pauraque were already down there in the clouds. He had a faint fix on their ship as it steered itself into the depths.

The seniors around Cinder had been eager to get him out of their hair, so it had not taken much to persuade them to give him a ship of his own. He had customized it according to Gallinule's specifications and added a few cautious refinements of his own... and then named it *Tyrant*.

The hull creaked and sang as it reshaped itself for transatmospheric travel. The navigational fix grew stronger. Merlin fell, knifing down through cloud layers. The planet had no sharply defined surface, but there came a point where the atmospheric pressure was exactly equivalent to the air pressure inside *Tyrant*. Below that datum, pressure and temperature climbed steadily. Gravity was an uncomfortable two gees, more or less tolerable if he remained in his seat.

The metasapphire hull creaked again, reshaping itself. Merlin had descended more than 100 kilo-



metres below the one-atmosphere datum and the pressure outside was now ten times higher. Above 50 atmospheres, the hull would rely on internal power sources to prevent itself buckling. Merlin did his best not to think about the pressure, but there was no ignoring the way the light outside had dimmed; veiled by the masses of atmosphere suspended above his head. Down below it was oppressively dark, like the sooty heart of a thunderstorm wrapped around half his vision. Only now and then was there a stammer of lightning which briefly lit the cathedrals of cloud below for hundreds of kilometres, down to vertiginous depths.

If there'd been more time, he thought, we'd have come with submarines, not spacecraft...

It was a dismal place to even think about spending any time in. But in that respect it made perfect sense. The thick atmosphere would make it easy to hide a modestly-sized floating base, smothering infra-red emissions. They would probably have to sleep during the hideaway period, but that was no great hardship. Better than spending decades awake, always knowing that beyond the walls was that crushing force constantly trying to squash you out of existence.

But there was something down here, Gallinule had said. Something that might count against using Ghost as a hideaway.

They had to know what it was.

"Warning," said *Tyrant*. "External pressure now 30 bars. Probability of hull collapse in the five minutes is now five percent."

Merlin killed the warning system. It did not know about the augmentations he had made to the hull armouring, but it was still unnerving. Yet Pauraque and Gallinule were lower yet, and their navigational transponder was still working.

If they were daring him to go deeper, he would accept.

"Merlin?" said his brother's voice, trebly with echoes from the atmospheric interference. "So you decided to join us after all. Did you bring Sayaca with you?"

"I'm alone. I didn't see any point in endangering two of us."

"Shame. Well, I hope you implemented those hull mods, or this is going to be a brief conversation."

"Just tell me what it is we're expecting to see down here. You mentioned something unexpected."

Pauraque's voice now. "There's a periodic pressure phenomenon moving through the atmosphere, like a very fast storm. What it is, we don't know. Until we understand it, we can't be certain that hiding inside Ghost will work."

Merlin nodded, suddenly seeing Gallinule's angle. His brother would want the phenomenon to prove hazardous just so that his plan could triumph over Pauraque's. It was an odd attitude, especially as Pauraque and Gallinule were now said to be lovers, but it was nothing unusual as far as his brother was concerned.

"I take it you have a rough idea when we can expect to see this thing?"

"Reasonably good," Pauraque said. "Approach us and follow our vector. We're going deeper, so watch those integrity readings."

As if to underline her words, the hull chose that moment to creak; a dozen alarms sounding. Merlin grimaced, silencing the warnings, and gunned *Tyrant* toward the other ship.

Ghost was a classical gas giant; 300 times more massive than Cinder. Most of the planet was hydrogen in its metallic state, overlaid by a deep ocean of merely liquid hydrogen. The cloud layers which seemed so immense – and which gave the world its subtle bands of colour – were compressed into only a few hundred kilometres of depth. Less than a hundredth of the planet's radius, yet those frigid, layered clouds of ammonia, hydrogen and water were as deep as humans could go. Pauraque wanted to hide at the lowest layer above the transition zone where the atmosphere thickened into a liquid hydrogen sea, under a crystal veil of ammonium hydro-sulphide and water-ice.

Ahead now, he could see the glint of the other ship's thrusters, illuminating sullen cloud formations as it passed through them. Only a few kilometres ahead.

"You mentioned that the phenomenon was periodic," Merlin said. "What exactly did you mean by that?"

"Exactly what I said," came Pauraque's reply, much clearer now. "The pressure wave – or focus – moves around Ghost once every three hours."

"That's much faster than any cyclone."

"Yes." The icy distaste in Pauraque's voice was obvious. She did not enjoy having a civil conversation with him. "Which is why we consider the phenomenon sufficiently..."

"It could be in orbit."

"What?"

Merlin checked the hull readouts again; watching as pressure hotspots flowed liquidly from point to point. Rendered in subtle colours, they looked like diffraction patterns on the scales of a sleek tropical fish.

"I said it could be in orbit. If one of Ghost's moons was in orbit just above the top of the cloud layer, three hours is how long it would take to go round. The time would only be slightly less for a moon orbiting just below the cloud layer, where we are."

"Now you've really lost it," Gallinule said. "In orbit? Inside a planet?"

Merlin shrugged. He had thought about this already and had a ready answer, but he preferred that Gallinule believe him to be thinking the problem through even as they spoke. "Of course, I don't really think there's a moon down there. But there could still be something orbiting."

"Such as?" Pauraque said.

"A black hole, for instance. A small one – say a tenth the mass of Cinder, with a light-trapping radius of about a millimetre. We'd have missed that kind of perturbation to Ghost's gravitational field until now. It wouldn't feel the atmosphere at all; not on the kind of timescales we're concerned with. But as the hole passed, the atmosphere would be tugged toward it for hundreds of kilometres along its track. Any chance that's your anomaly?"

There was a grudging silence before Pauraque answered. "I admit that at the very least it's possible. We more or less arrived at the same conclusion. Who knows

how such a thing ended up inside Ghost, but it could have happened."

"Maybe someone put it there deliberately."

"We'll know soon enough. The storm's due any moment now."

She was right. The storm focus – whatever it was – moved at 40 kilometres per second relative to Ghost's core, but since Ghost's equatorial cloud-layers were already rotating at a quarter of that speed, and in the same sense as the focus, the storm only moved at 30 kilometres per second against the atmosphere. Which, Merlin thought, was still adequately fast.

He told the cabin windows to amplify the available light, gathering photons from beyond the visible band and shifting them into the optical. Suddenly it was as if the overlying veils had been stripped away; sunlight flooding the canyons and crevasses of cloud through which they were flying. The liquid hydrogen ocean began only a few tens of kilometres below them, under a transition zone where the atmospheric gases became steadily more fluidic. It was blood-hot down there; pressures nudging toward 100 atmospheres. Not far below the sea they would climb into the thousands, at temperatures hot enough to melt machines.

And now something climbed above the horizon to the west. *Tyrant* began to shriek alarms, its dull machine sentience comprehending that there was something very wrong nearby, and that it was a wrongness which was approaching at ferocious speed. The storm focus gathered clouds as it moved, tugging them violently out of formation. To Merlin's eyes, the way it moved reminded him of something from his childhood; something glimpsed moving through Plenitude's tropical waters with predatory swiftness; a darting mass of whirling tentacles.

"We're too high," Pauraque said. "I'm taking us lower. I want to be much closer to the focus when it arrives."

Before he could argue, Merlin saw the violet thrust spikes of the other ship. It slammed away, dwindling into the soupy stillness of the upper transition zone. He thought of a fish descending into some lightless ocean trench, into benthic darkness.

"Watch your shielding," he said, as he dove his own ship after them.

"Pressure's still within safe limits," Gallinule said, though they both knew that what now constituted safe was not quite the usual sense of the word. "I'll pull up if the rivets start popping, trust me."

"It's not just the pressure that worries me. If there's a black hole in that focus, there's also going to be a blast of gamma-rays from the matter being sucked in."

"We haven't seen anything yet. Maybe the flux is masked by the clouds."

"You'd better hope it is."

Merlin was suited up, wearing the kind of high-pressure mobility armour he had only ever worn before in warcreche simulations. The armour was prized technology, many kiloyears old: nothing like it now within the Cohort's technical reach. He hoped Gallinule and Pauraque were similarly prudent. If the hull gave in, the suits might only give them a few more minutes of life, but

near something as unpredictable and chaotic as a miniature black hole, there was no such thing as too much shielding.

"Merlin?" Gallinule said. "We've lost a power node. Damn jury-rigged things. If there's a pressure wave before the focus we might start to buckle..."

"You can't risk it. Pull up and out. We can come back again on the next pass, three hours from now."

He had seen accretion disks, the swirls of matter around stellar-mass black holes and neutron stars, and what he saw near the storm's focus looked very similar: a spiralling concentration of cloud, tortured into rainbow colours as strange, transient chemistries came into play. They were so deep in the transition zone here that only tiny pressure changes were enough to condense the air into its fluid state. Lightning cartwheeled across the focus, driven by static differentials in the moving air masses. Merlin checked the range: close now; less than 200 kilometres away.

And something was wrong.

Pauraque's ship was sinking too far; drifting too close to the heart of the storm. They were above it now, but their rate of descent would bring them close to the focus by the time it arrived.

"Force and wisdom, I told you to pull up, not go deeper!"

"We have a problem. Can't reshape the hull on our remaining nodes. No aerodynamic control." Gallinule's voice was calm, but Merlin knew his brother was terrified.

"Vector your thrust."

"Hell's teeth, what do you think I'm trying to do?"

No good. He watched the violet spikes of the other ship's thrusters stab in different directions, but there was nothing Gallinule could do to bring them out of their terminal descent. Merlin thought of the mods Gallinule had recommended. Unless he had added some hidden improvements, the other ship would implode in ten or 15 seconds. There would be no surviving that.

"Listen to me," Merlin said. "You have to equalize pressure with the outside, or that hull's going to implode."

"We'll lose the ship that way."

"Don't argue, just do it! You have no more than ten seconds to save yourselves!"

He closed his eyes and hoped they were both suited. Or perhaps it would be better if they were not. To die by hull implosion would be swift, after all. The intruding walls would move faster than any human nerve impulses.

On the magnified view of the other ship he saw a row of intakes flicker open along the dorsal line. Soup-thick atmosphere would have slammed in like an iron fist. Maybe their suits were good enough to withstand that shock.

He hoped so.

The thrust flames died out. Running lights and fluorescent markings winked out. A moment later he watched the other ship come apart like something fashioned from gossamer. Debris lingered for an instant before being crushed toward invisibility.

And two bulbously-suited human figures fell through the air, drifting apart as they were caught in the torpid currents which ran through the transition zone. For a moment the suits were androform, but then their cara-

paces flowed liquidly toward smooth egg-shapes, held rigid by the same principle which still protected Merlin's ship. They were alive – he was sure of that – but they were still sinking; still heavier than the air they displaced. The one that was now falling fastest would pass the storm at what he judged to be a safe distance. The other would fall right through the storm's eye.

He thought of the focus of the storm; a seething eye of flickering gamma-rays, horrific gravitational stress and intense pressure eddies. They had not seen it yet, but he could be sure that was what it would be like. A black hole, even a small one, was no place to be near.

"Final warning," *Tyrant* said, bypassing all his overrides. "Pressure now at maximum safe limit. Any further increase in..."

He made his decision.

Slammed *Tyrant* screaming toward the survivor who was headed toward the eye. It would be close; hellishly so. Even the extra margins he had built into this ship's hull would be pushed perilously close to the limit. On the cabin window, cross-hairs locked around the first falling egg. Range: eleven kilometres and closing. He computed an approach vector and saw that it would be even closer than he had feared. They would be arcing straight toward the eye by the time he had the egg aboard. Seven kilometres. There would not be time to bring the egg aboard properly. The best he could do would be to open a cavity in the hull and enclose it. Frantically he told *Tyrant* what he needed; by the time he was done range was down to three kilometres. He felt faint, phantom deceleration as *Tyrant* matched trajectories with the egg and brought itself in for the rendezvous. The egg left a trail of bubbles behind it as it dropped, evidence of the transition to ocean. Somewhere on *Tyrant's* skin, a cavity puckered open, precisely shaped to accept the egg. They tore through rushing curtains of cloud. In a few moments he would be near enough to see the eye, he knew. One kilometre... 600 metres. Three hundred.

The faintest of thumps as the egg was captured. Membranes of hull locked over the prize and resealed. Whoever he had saved was as safe now as Merlin.

Which was really saying very little.

"Instigate immediate pull-up. Hull collapse imminent. Severe pressure transition imminent."

He was through the eye now; perhaps only two or three kilometres from the sucking point of the black hole. He had expected to see the clouds drawn into a malignant little knot, with a flickering glint of intense light at the heart of the whirlpool, but there was nothing; just clear skies. There was a local gravitational distortion, but it was nowhere near as severe as he had expected. Merlin glanced at the radiation alarms, but they were not showing anything unusual.

No hint of gamma-radiation.

He wanted time to think, wanted to work out how he could be this close to a black hole and feel no radiation, but what was coming up below instantly demanded his attention. There was the other egg, tumbling below; wobbling as if in a mirage. Pressure was distorting it; readying to crush it. And down below, slumbering under the

transition zone, was the true hydrogen sea. In a few seconds the other egg would be completely immersed in that unimaginably dense blackness and it would all be over. For a moment he considered swooping in low; trying to snatch the egg before it hit. He ran the numbers and saw the chilling truth.

He would have to enter the sea as well.

Merlin gave *Tyrant* its orders and closed his eyes. Even in the cushioning embrace of his suit, the hairpin turn as the ship skimmed the ocean would still not be comfortable. It would probably push him below consciousness. Which, he thought, might turn out to be the final mercy.

The sea's hazy surface came up like a black fog.

Thought faded for an instant; returned muggily, and now through the windows he saw veils of cloud toward which he was climbing. The feeling of having survived was godlike. Yet something was screaming. The ship, he realized. It had sloughed millimetres of hull to stay intact. He prayed that the damage would not prevent him getting home.

"The second egg..." Merlin said. "Did we get it?"

Tyrant was clever enough – just – to know what he meant. "Both eggs recovered."

"Good. Show me..."

Proctors carried the first egg into the cabin; fiddling with it until they persuaded it to revert to androform shape. When the facial region became transparent he saw that it was his brother that this egg had saved, although Gallinule was clearly unconscious. Not dead though; he could tell that from the egg's luminous readouts. He felt a moment of pure, unadulterated bliss. He had saved Gallinule, but not selfishly. He had not known which of the two eggs had been falling toward the eye. In fact, he did not even know that this was that egg. Had he plucked his brother from the sea, instants before the ocean would have crushed him?

But then he saw the other egg. The proctors, stupid to the end, had seen fit to bring it into the cabin. They carried it like a trophy; as if it was something he would be overjoyed to see. But it was barely larger than a space helmet.

+ + + + + PART FOUR + + + + +

"I think I know what killed her," Sayaca said.

The three of them had agreed to meet within the Palace of Eternal Dusk. Sayaca had arranged a demonstration, casting into the sky vast projected shapes which she orchestrated with deft gestures.

"It wasn't a black hole, was it?" Gallinule said.

"No." She took his hand in both of hers, comforting him as they dug through the difficult memory of Pauraque's death. It had happened months ago, but the pain of it was still acute for Gallinule. Merlin watched from one side, lingeringly resentful at the tenderness Sayaca showed his brother. "I think it was something a lot stranger than a black hole. Shall I show you?"

A double helix writhed in the sky; luminous and serpentlike against Plenitude's perpetual pink twilight.

Releasing Gallinule's hand, Sayaca lifted a finger and the DNA coil swelled to godlike size, until the individual base pairs were themselves too large to discern

as anything other than blurred assemblages of atoms, huger than mountains. But atoms were only the beginning of the descent into the world of the vanishingly small. Atoms were assembled from even tinier components: electrons, protons and neutrons, bound together by the electroweak and strong forces. But even those fundamental particles held deeper layers of structure. All matter in the universe was woven from quarks or leptons; all force mediated by bosons.

Even that was not the end.

In the deepest of deep symmetries, the fermions – the quarks and leptons – and the bosons – the messengers of force – blurred into one kind of entity. Particle was no longer the right word for it. What everything in the universe seemed to boil down to, at the very fundamental level, was a series of loops vibrating at different frequencies, embedded in a multi-dimensional space.

What, Sayaca said, scientists had once termed *super-*

strings.

It was elegant beyond words, and it explained seemingly everything. But the trouble with superstring theory, Sayaca added, was that it was extraordinarily difficult to test. It was likely that the theory had been reinvented and discarded dozens or hundreds of times in human history, during each brief phase of enlightenment. Undoubtedly the Waymakers must have come to some final wisdom as to the ultimate nature of reality... but if they had, they had not left that verdict in any form now remembered. So from Sayaca's viewpoint, superstring theory was at least as viable as any other model for unifying the fundamental particles and forces.

"But I don't see how any of this helps us understand Pauraque's Storm," Merlin said.

"Wait," said Sayaca's semblance. "I haven't finished. There's more than one type of superstring theory, understand? And some of those theories make a special prediction about the existence of something called shadow matter. It's not the same thing as anti-matter. Shadow matter's like normal matter in every respect, except it's invisible and insubstantial. Objects made of normal and shadow matter just slip through each other like ghosts. There's only one way in which they sense each other."

"Gravity," Merlin said.

"Yes. As far as gravity's concerned, there's nothing to distinguish them."

"So what are you saying? That there could be whole universes made of shadow-matter co-existing with our own?"

"Exactly that." She went on to tell them there was every reason to suppose that the shadow universe was just as complex as the normal one, with exactly analogous particles types, atoms and chemistry. There would be shadow galaxies, shadow stars and shadow worlds – perhaps even shadow life.

Merlin absorbed that. "Why haven't we encountered anything like shadow matter before?"

"There must be strong segregation between the two types across the plane of the galaxy. For one reason or another, that segregation has broken down around Bright Boy. There seems to be about half a solar mass of shadow matter gravitationally bound to this system – most of it sitting in Bright Boy's core."

Merlin's tightened his grip on the balustrade. "Tell me this answers all our riddles, Sayaca."

Sayaca told them the rest; reminding Merlin how they had probed Cinder's interior via sound waves; each sonic pulse generated by the impact of an in-falling meteorite; the sound waves tracked as they swept through Cinder, gathered at a network of listening posts sprinkled across the surface. It was these seismic images which had first elucidated the fine structure of the digger tunnels. But – unwittingly – Sayaca had learned much more than that.

"We measured Cinder's mass twice. The first time was when we put our own mapping satellites into orbit. That gave us one figure. The seismic data should have given us a second estimate which agreed to within a few per cent. But the seismic data said there was only two thirds as much mass as there should have been, compared with the gravitational mass estimate." Sayaca's semblance

paused, perhaps giving the two of them time to make the connection themselves. When neither spoke, she permitted herself to continue. "If there's a large chunk of shadow matter inside Cinder, it explains everything. The seismic waves only travel through normal matter, so they don't see one third of Cinder's composition at all. But the gravitational signature of normal and shadow matter is identical. Our satellites felt the pull of the normal *and* shadow matter, just as we did when we were walking around inside Cinder."

"All right," he said. "Tell me about Bright Boy, too."

"It makes just as much sense. Most of the shadow matter in this system must be inside the star. Half a solar mass would be enough for Bright Boy's shadow counterpart to become a star in its own right – burning its own shadow hydrogen to shadow helium, giving off shadow photons and shadow neutrinos, none of which we can see. Except just like Bright Boy it would be an astrophysical anomaly – too bright and small to make any kind of sense, because its structure is being affected by the presence of an equal amount of normal matter from *our* universe. Both stars end up with hotter cores, since the nuclear reactions have to work harder to hold up the weight of overlying stellar atmosphere."

Sayaca thought that the two halves of Bright Boy – the normal and shadow mass suns – had once been spatially separated, so that they formed the two stars of a close binary system. That, she said, would have been something so strange that no passing culture could have missed it, for the visible counterpart of Bright Boy would have seemed to be locked in orbital embrace with an invisible partner, signalling its oddity across half the galaxy. Over the ensuing billions of years, the two stars had whirled closer and closer together, their orbital motions damped by tidal dissipation, until they had merged and settled into the same spatial volume. *Whoever comes after us*, Merlin thought, *we won't be the last to study this cosmic mystery.*

"Then tell me about Pauraque's Storm," he said, flinching at the memory of her crushed survival egg.

Gallinule nodded. "Go on. I want to know what killed her."

Sayaca spoke now with less ease. "It must be another chunk of shadow matter – about the mass of a large moon, squashed into a volume no more than a few tens of kilometres across. Of course, it wasn't the shadow matter itself that killed her. Just the storm it caused by its passage through the atmosphere."

And not even that, Merlin thought. It was his decision that killed her; his conviction that it was more vital to save the first egg, the one falling into the storm's eye. Afterwards, discovering that there was no gamma-ray point there, he had realized that he could have saved both of them if he had saved Pauraque first.

"Something that massive, and that small..." Gallinule paused. "It can't be a moon, can it?"

Sayaca turned away from the sunset. "No. It's no moon. Whatever it is, it was made by someone. Not the Huskers, I think, but someone else. And I think we have to know what it was they had in mind."

Nervously, Merlin watched seniors populate the auditorium; walking in or simply popping into holographic existence, like card figures dropped into a toy theatre. Sayaca had bided her time before announcing her discovery to the rest of the expedition, but eventually the three of them had gathered enough data to refute any argument. When it became clear that her news would be momentous, seniors had flown in from across the system, leaving the putative hideaways they were investigating. A few of them even sent their semblances, for the simulacra were now sophisticated enough to make many physical journeys unnecessary.

The announcement would take place in the auditorium of the largest orbiting station, poised above Ghost's cloud-tops. An auroral storm was lashing Ghost's northern pole; appropriately dramatic for the event. He wondered if Sayaca had scheduled the meeting with that display in mind.

"Go easy on the superstring physics," Gallinule whispered in Sayaca's ear, next to Merlin. "You don't want to lose them before you've begun. Some of these relics don't even know what a quark is, let alone a baryon-to-entropy ratio."

Gallinule was right to warn Sayaca. It would be like her to begin her announcement by projecting a forest of equations on the display wall.

"Don't worry," Sayaca said. "I'll keep it nice and simple; throw in a few jokes to wake them up."

Gallinule kept his voice low. "They won't need waking up, once they realize what the implications are. Straight-forward hiding's no longer an option; not with something as strange as the Ghost anomaly sitting in our neighbourhood. When the Huskers arrive they're bound to start investigating. They're also bound to find any hide-away we construct, no matter how well camouflaged."

"Not if we dig deep enough," Merlin said.

"Forget it. There's no way we can hide now. Not the way it was planned, anyway. Unless..."

"Don't tell me; we'd be perfectly safe if we could store ourselves as patterns in some machine memory?"

"Don't sound so nauseated. You can't argue with the logic. We'd be nearly invulnerable. The storage media could be physically tiny; distributed in many locations. Impossible for the Huskers to find them all."

"The Council can decide," Sayaca said, raising a hand to shut the two of them up. "Let's see how they take my discovery, first."

"It was Pauraque's discovery," Merlin said quietly.

"Whatever."

She was already walking away from them, crossing the auditorium's floor toward the podium where she would address the congregation. Sayaca walked on air; striding across the clouds. It was a trick, of course: the real view outside the station was constantly changing because of the structure's rotation, but the illusion was flawless.

"It may have been Pauraque who discovered the storm," Gallinule said, "but it was Sayaca who interpreted it."

"I wasn't trying to take anything away from her."

"Good."

Now she stepped up to the podium, the hem of her electric-blue gown floating above the clouds. She stood proudly, surveying the people who had gathered here to hear

her speak. Her expression was one of complete calm and self-assurance, but Merlin saw how tightly she grasped the edges of the podium. He sensed that beneath that shell of control she was acutely nervous, knowing that this was the most important moment in her life; the one that would make her reputation among the seniors and perhaps shape all of their destinies.

"Seniors..." Sayaca said. "Thank you for coming here. I hope that by the time I've finished speaking, you'll feel that your time wasn't wasted." Then she extended a hand toward the middle of the room and an image of Ghost sprang into being. "Ever since we identified this system as our only chance of concealment, we've had to ignore the troubling aspects of the place. Bright Boy's anomalous mass-luminosity relationship, for instance. The seismic discrepancies in Cinder. Pauraque's deep-atmospheric phenomenon in Ghost. Now the time has come to deal with these puzzles. I'm afraid that what they tell us may not be entirely to our liking."

Promising start, Merlin thought. She had spoken for more than half a minute without using a single mathematical expression.

Sayaca begun to speak again, but she was cut off abruptly by another speaker. "Sayaca, there's something we should discuss first." Everyone's attention moved to the interjector. Merlin recognized who it was immediately: Weaver. Cruelly handsome, the boy had outgrown his adolescent awkwardness in the years since Merlin had first known him as one of Sayaca's class.

"What is it?" she said, only the tiniest hint of suspicion in her voice.

"Some news we've just obtained." Weaver looked around the room, clearly enjoying his moment in the limelight while attempting to maintain the appropriate air of solemnity. "We've been looking along the Way, as a matter of routine, monitoring the swarm that lies ahead of us. Sometimes off the line of the Way, too – just in case we find anything. We've also been following the *Bluethroat*."

It was so long since anyone had mentioned that name that it took Merlin an instant to place it. Of course; the *Bluethroat*. The part of the original ship which Crombec had flown onwards, while the rest of them piled into *Starling* and slowed down around Bright Boy. It was not that anyone hated Crombec or wished to bury him and his followers from history; simply that there had been more than enough to focus on in the new system.

"Go on..." Sayaca said.

"There was a flash. A tiny burst of energy light-years from here, but in the direction we know Crombec was headed. I think the implications are clear enough. They met Huskers, even in interstellar space."

"Force and wisdom," said Shikra; the archivist in charge of the Cohort's most precious data troves. "They can't have survived."

Merlin raised his voice above the sudden murmur of debate. "When did you find this out, Weaver?"

"A few days ago."

"And you waited until now to let us know?"

Weaver shifted uncomfortably, beginning to sweat. "There were questions of interpretation. We couldn't

release the news until we were sure of it.” Then he nodded toward Sayaca. “You know what I mean, don’t you?”

“Believe me, I know exactly what you mean,” she said, shaking her head. She must have known that the moment was no longer hers; that even if she held the attention of the audience again, their minds would not be fully on what she had to say.

She handled it well, Merlin thought.

But irrespective of what she had found in Ghost, the news was very bad. The deaths of Crombec and his followers could only mean that the immediate volume of space was much thicker with Husker assets than anyone had dared fear. Forget the two swarms they had already known about; there might be dozens more, lurking quietly only one or two light-years from the system. And perhaps they had learned enough from Crombec’s trajectory to guess that there must be other humans nearby. It would not take them long to arrive.

In a handful of years they might be here. “This is gravely serious,” one of the other seniors said, raising her voice above the others. “But it must not be allowed to overshadow the news Sayaca has for us.” He nodded at her expectantly. “Continue, won’t you?”

Months later, Merlin and Gallinule were alone in the Palace, standing on the balcony. Gallinule was toying with a white mouse, letting it run along the balustrade’s narrow top before picking it up and placing it at the start again. They had put Weaver’s spiteful sabotage long behind them, once it became clear that it had barely dented the impact of Sayaca’s announcement. Even the most conservative seniors had accepted the shadow-matter hypothesis, even if the precise nature of what the shadow-matter represented was not yet clear.

Which was not to say that Weaver’s own announcement had been ignored, either. The Huskers were no longer a remote threat, decades away from Bright Boy. The fact that they were almost certainly converging on the system brought an air of apocalyptic gloom to the whole hideaway enterprise. They were living in end times; certain that no actions they now took would really make much difference.

It’s been centuries since we made contact with another human faction; another element of the Cohort, Merlin thought. For all we know, there are no more humans anywhere in the Galaxy. We are all that remains; the last niche which the Huskers haven’t yet sterilized. And in a few years we might all be dead as well.

“I almost envy Sayaca,” Gallinule said. “She’s completely absorbed in her work in Cinder again. As if nothing else will ever affect her. Don’t you admire that kind of dedication?”

“She thinks she’ll find something in Cinder that saves us all.”

“At least she’s still optimistic. Or desperate, depending on your point of view. She sends her regards, incidentally.”

“Thanks,” Merlin said, biting his tongue.

Gallinule had just returned from Cinder; his third and longest trip there since Sayaca had left Ghost. Once the

shadow-matter hypothesis had been accepted, Sayaca had seen no reason to stay here. Other gifted people could handle this line of enquiry while she returned to her beloved tunnels. Merlin had visited her once, but the reception she had given him had been no more than cordial. He had not gone back.

“Well, what do you think?” Gallinule said.

Suspended far out to sea was a representation of what they now knew to be lurking inside Ghost. It was the sharpest view Merlin had seen yet; gleaned by swarms of gravitational-mapping drones swimming through the atmosphere. What the thing looked like, to Merlin’s eye, was a sphere wrapped around with dense, branching circuitry. The closer they looked, the sharper their focus, the more circuitry appeared, on steadily smaller scales, down to the current limiting resolution of about ten metres. Anything smaller than that was simply blurred away. But what they saw was enough. They had been right, all those months ago: this was nothing natural. And it was not quite a sphere, either: resolution was good enough now to see that the thing was a tear-drop shape, with the sharp end pointed more or less parallel to the surface of the liquid hydrogen ocean.

“I think it scares me,” Merlin said. “I think it shows that this is the worst possible place we could ever have picked to hide.”

“Then we have to accept my solution,” Gallinule said. “Become software. It can be done, you know. In a few months we’ll have the technology to scan ourselves.” He held up the mouse again. “See this little fellow? He was the first. I scanned him a few days ago.”

Merlin stared at the mouse.

“This is really him,” Gallinule continued. “Not simply a projection of a real mouse into the Palace’s environment, or even a convincing fake. Slice him open and you’d find everything you’d expect. He only exists here now, but his behaviour hasn’t changed at all.”

“What happened to the real mouse, Gallinule?”

Gallinule shrugged. “Died, of course. I’m afraid the scanning procedure’s still fairly destructive.”

“So the little catch in your plan for our salvation is that we’d have to die to get inside your machine?”

“If we don’t do it, we die anyway. Not much to debate, is there?”

“Not if you put it in those terms, no. We could of course experiment with the final syrx and find a better way to escape, but I suppose that’s too much of an imaginative leap for anyone to make.”

“Except you, of course.”

They were silent for long moments. Merlin stared out to sea, the Palace’s reality utterly solid to him now. He did not think that it felt any less real to the mouse. This was how it could be for all of them, if Gallinule had his way: inhabiting any environment they liked until the Husker threat was over. They could skip over that time if they wished, or spend it exploring a multitude of simulated worlds. The trouble was, would there be anything to lure them back into the real world when the danger had passed? Would they even bother remembering what had come before? The Palace was already tantalizing enough.

There had been times when Merlin had found it difficult to leave the place. It was like a door into his youth.

"Gallinule..." Merlin said. "There's something I always meant to ask you about the Palace. You've made it as real as humanly possible. There isn't a detail out of place. Sometimes it makes me want to cry, it's so close to what I remember. But there's something missing. Someone, to be exact. Whenever we were here – back in the real Palace, I mean – then she was always here as well."

Gallinule stared at him in something like horror. "You're asking me if I ever thought of simulating mother?"

"Don't tell me it didn't cross your mind. I know you could have done it, as well."

"It would have been a travesty."

Merlin nodded. "I know. But that doesn't mean you wouldn't have thought of it."

Gallinule shook his head slowly and sadly, as if infinitely disappointed at his brother's presumption. In the silence that followed, Merlin stared out at the shadow-matter object which hung over the sea. Whatever happened now, he thought, things between him and Gallinule could never be quite the same. It was not simply that he knew Gallinule was lying about their mother. Gallinule would have tried recreating her: anything less would have been an unforgivable lapse in his brother's devotion to detail. No; what had truly come between them was Sayaca. She and Gallinule were lovers now, Merlin knew, and yet this was something that he had

never discussed with his brother. Time had passed and now there seemed no sensible way to broach the subject. It was simply there; unavoidable, like the knowledge that they would probably all die before very long. There was nothing to be done about it, so no point in discussing it. But in the same moment he realized something else: something that had been nagging at the back of his mind since the very earliest maps of the anomaly had come in.

"Expand the scale," he said. "Zoom out, massively."

Gallinule looked at him wordlessly, but obeyed his brother all the same. The anomaly shrank toward invisibility.

"Now show the anomaly's position within the system. All planetary positions to be exactly as they are now."

A vast, luminous orrery filled the sky: concentric circles centred on Bright Boy, with nodal points for the planets.

"Now extend a vector with its origin in the anomaly, parallel to the anomaly's long axis. Make it as long as necessary."

"What are you thinking?" Gallinule said, all animosity gone now.

"That all the anomaly ever was was a pointer, directing our attention to the really important thing. Just do it, will you?"

A straight line knifed out from Ghost – the anomaly insignificant at this scale – and cut across the system, toward Bright Boy and the inner worlds.

Knifing straight through Cinder.

+ + + + + PART FIVE + + + + +

"I wanted you to be the first to know," Sayaca said, her semblance standing regally in his quarters like a playing-card monarch. "We've found signals coming from inside the planet. Gravitational signals – exactly what we'd expect if someone in the shadow universe was trying to contact us."

Merlin studied the beautiful lines of her face, reminding himself that all he was speaking to was a cunning approximation of the real Sayaca, who was light-hours of communicational timelag down-system.

"How do they do it? Get a signal across, I mean."

"There's only one way: you have to move large masses around quickly, creating a high frequency ripple in spacetime. They're using black holes, I think: miniature ones, like the thing you first thought we'd found in Ghost. Charged up and oscillated, so that they give off an amplitude-modulated gravitational wave."

Merlin shrugged. "So it wasn't such a stupid idea to begin with."

Sayaca smiled tolerantly. "We still don't know how they make and manipulate them. But that doesn't matter for now. What does is that the message is clearly intended for us. It's only commenced since we reached into Cinder's deeper layers. Somehow that action alerted them – whoever *they* are – to our presence."

Merlin shivered despite himself. "Is there any chance that these signals could be picked up by the Huskers as well?"

"Every chance, I'd say – unless they stop before they get here. Which is why we've been working so hard to decode the signal."

"And you have?"

Sayaca nodded. "We identified recurrent patterns in the gravitational signal; a block of data which the shadow people were sending over and over again. Within this block of data were two kinds of bits; a strong gravitational pulse and a weaker one, like a one and zero in binary notation. The number of bits in the signal was equal to the product of three primes – definitely not accidental – so we reassembled the data-set along three axes, forming a three dimensional image." Sayaca paused and lifted her palm. What appeared in mid-air was a solid rectangular form, slab-sided and featureless. It rotated lazily, revealing its blankness to the audience.

"Doesn't look like much," Merlin said.

"That's because the outer layer of the solid is all ones. In fact, only a tiny part of its volume is made up of zeroes at all. I'll remove the ones and display only the zero values..."

A touch of showmanship: the surface of the box suddenly seemed to be made out of interlocking birds, frozen in formation for an instant before flying in a million different directions. Suddenly what she was showing him made a lot more sense. It was like a ball of loosely knotted string. A map of Cinder's crustal tunnels, plunging more deeply toward the core than their own maps even hinted. Five or six hundred kilometres into the lithosphere.

"But it doesn't tell us anything we wouldn't have learned eventually..." Merlin said.

"No; I think it does." Sayaca made the image enlarge, until she was showing him the deep end of one particular tunnel. It was capped by a nearly spherical chamber. "All the other shafts end abruptly; even those which branch off from this one at higher levels. But they've clearly drawn our attention to this chamber. That has to mean something."

"You think there's something there, don't you?"

"We'll know soon enough. By the time this semblance speaks to you, Gallinule and I will have almost reached that chamber. Wish us the best of luck, won't you? Whatever we find in there, I'm fairly certain it'll change things for us."

"For better or for worse?"

The semblance smiled. "We'll just have to wait and see, won't we?"

End times, Merlin thought again. He could taste it in the air: quiet desperation. The long-range sensors sprinkled around the system had picked up the first faint hints of

neutrino emission which might originate with Husker craft moving stealthily toward Bright Boy from interstellar space. And the main swarms up and down the length of the Way had not gone away.

One or two humans had undergone Gallinule's fatal scanning process now, choosing to go ahead of the pack rather than wait for the final stampede. Their patterns were frozen at the moment, but before very long Gallinule's acolytes would weave a simulated environment which the scanned could inhabit. Then, undoubtedly, others would follow. But not many. Merlin was not alone in flinching at the idea of throwing away the flesh just to survive. There were some prices that were simply too high; simply too alien.

Do that, he thought, and we're halfway to being Huskers ourselves.

What could he do to save himself, if saving the rest of them was out of the question? He thought of stealing the syrx. He had not learned enough to use it safely yet, but he knew he was not far from being able to do so. But it was tightly guarded; under permanent Council scrutiny. He had asked Gallinule and Sayaca to apply persuasion to the others, but while they might have had the necessary influence, they had not acceded to his wishes.

And now Sayaca was back from Cinder, bearing tidings. She had convened a meeting again, but this time nobody was going to steal her thunder.

Especially as she had brought someone with her.

It was the semblance of a woman; a female of uncertain age but from approximately the same genetic background as everyone present. That was nothing to be counted on: since the Flourishing there had been many splinters of humanity which seemed monstrously strange to those who had remained loyal to the old phenotype. But had this woman changed her clothes, make-up and hairstyle, she could have walked among them without attracting a second glance. Except perhaps for her beauty: something indefinably serene in her face and bearing which seemed almost supernatural.

Her expression, before she began speaking, was one of complete calm.

"My name is Halvorsen," she said. "It's an old name, archaic even in my own time... I have no idea how it will sound to your ears, or if you can even understand a word of what I'm saying. We will record versions of this message in over 1,000 languages; all that we hold in our current linguistics database, in the hope that some distant traveller will recognize something, anything, of use."

Merlin raised a hand. "Stop... stop her. Can you do that?"

Sayaca nodded, causing Halvorsen to freeze, mouth open.

"What is she?" Merlin said.

"Just a recording. We triggered her when we arrived in the chamber. It wasn't hard to translate her. We already knew that the Diggers used something which would later evolve into Main, so it was just a question of hoping that one of the recordings would be in a tongue which was also in our records."

"And?"

"Well, none of her messages were in languages we knew moderately well. But three were in languages for which we had fragments, so we were able to patch together this version using all three threads. There are still a few holes, of course, but I don't think we'll miss anything critical."

"You'd better hope not. Well, let her – whoever she is – continue."

Halvorsen became animated again. "Let me say something about my past," she said. "It may help you establish the timeframe in which this recording was made. My ancestors came from Earth. So did yours – if you are at all human – but in my case I even met someone who had been born there, although it was one of her oldest memories; something as faint and tiny as an image seen through the wrong end of a telescope. She remembered a time before the Flourishing; before the great migrations into the Orion Arm. We rode swallowships for 10,000 years, cleaving close to lightspeed. Then came wars. Awful wars. We hid for another 10,000 years, until our part of the Galaxy was quiet again. We watched many cultures rise and fall, learning what we could from them; trading with those who seemed the least hostile. Then the Waymakers came, extending their transit network into our region of space. They were like gods to us as well, although we stole some of their miracles and fashioned them to our own uses. After thousands of years of careful study we learned how to make syringes and to use the Waynet." She paused. "We had a name for ourselves, too: the Watchers."

Halvorsen's story continued. She told them how a virus had propagated through their fleets, subtly corrupting their most ancient data heirlooms. By the time the damage was discovered, all their starmaps had been rendered useless. They no longer knew where Earth was. At first, the loss seemed of minimal importance, but as time passed, and they came into contact with more and more cultures, it became clear that the Watchers' records had probably been the *last* to survive uncorrupted.

"That was when she died; the oldest of us. I think until then she had always clung to some hope that we would return to Earth. When she knew it could never happen, she saw no reason to continue living."

Then they entered a long dark age. The Waymakers had gone; now, unpoliced, terrors were roaming the galaxy. Marauders sought the technological wisdom which the Watchers had acquired over slow millennia. The Watchers fled, pursued across the light years in much the same manner as the Cohort now found itself; hounded from star to star. Like the Cohort, too, they found Bright Boy. They were exploring it; trying to understand the system's anomalies; hoping that the understanding would bring new power over their enemies. They had excavated the tunnel system into Cinder and created the machines which lined the terminal chamber. They too had detected signals from the shadow universe, although the contents of the messages proved much harder to decode.

"They were alien," Halvorsen said. "Truly alien: automated transmissions left behind half a billion years earlier by a group of creatures who had crossed over into the shadow universe. They had been fleeing the fire which was about to be unleashed by the merger of a pair of

binary neutron stars only a few hundred light-years away. They left instructions on how to join them. We learned how to generate the same kinds of high-frequency gravitational waves which they were using to signal us. Then we learned how to encode ourselves into those wave packets so that we could send biological information between universes. Although the aliens were long gone, they left behind machines to tend for us and take care of our needs once we were re-assembled on the other side."

"But the Marauders are long gone," Merlin said. "Our oldest records barely mention them. Why didn't Halvorsen and her people return here?"

"There was no need," Sayaca said. "We tend to think of the shadow universe as a cold, ghostly place, but once you're mapped into it, it looks much like our own universe – the sky dotted with bright suns; warm worlds orbiting them. Theirs for the taking, in fact. Halvorsen's people had been late-players in a galaxy already carved up by thousands of earlier factions. But the shadow universe was virgin territory. They no longer had to skulk around higher powers, or hide from outlaw clades. There was no one else there."

"Except the aliens... the –" Merlin blinked. "What did she call them?"

Sayaca paused before answering "She didn't. But their name for them was the..." Again, a moment's hesitation. "The Shadow Puppets. And they were long gone. They'd left behind machines to assist any future cultures who wanted to make the crossing, but there was no sign of them now. Maybe they moved away to settle some remote part of the shadow galaxy, or maybe they returned to our universe when the threat from the merger event had passed."

"Halvorsen's people trusted these creatures?"

"What choice did they have? Not much more than us. They were in as much danger from the Marauders as we are from the Huskers."

It was Halvorsen who continued the story. "So we crossed over. We expanded massively; extended a human presence around a dozen nearby systems on the other side. Star travel's difficult because there's no Waynet, but the social templates we acquired during the time before the Marauders have served us well. We've been at peace for 1,000 years at the time of this message's recording. Many more thousands of years are likely to have passed before it reaches you. If we attempted to communicate with you gravitationally, then you can be sure that we're still alive. By then we will have studied you via the automated systems we left running in Cinder. They will have told us that you are essentially peaceable; that we are ready to welcome you."

Halvorsen's tone of voice changed now. "That's our invitation, then. We've opened the gateway for you; provided the means for information to pass into the shadow universe. To take the next step, you must make the hardest of sacrifices. You must discard the flesh; submit yourselves to whatever scanning techniques you have developed. We did it once, and we know it's a difficult journey, but less difficult than death. For us, the choice was obvious enough. With you, it may not be so very different." Halvorsen paused and extended a hand in supplication. "Do not be frightened. Follow us. We have been waiting a long time for your company."

Then she bowed her head and the recording halted.

Merlin could feel the almost palpable sense of relief sweeping the room, though no one was undignified enough to let it show. A swelling of hope, after so many months of staring oblivion in the face. Finally, there was a way out. A way to survive which was something other than Gallinule's route to soulless immortality in computer memory. Even if it also meant dying... but it would only be a transient kind of death, as Halvorsen had said. Waiting for them on the other side was another world of the flesh, into which they would all be reborn.

A kind of promised land.

It would be very difficult to resist, especially when the Huskers arrived. But Merlin just stared hard at the woman called Halvorsen, certain that he knew the truth and that Sayaca had, on some level, wanted him to know it as well.

That she was lying.

Tyrant fell toward empty space, in the general direction of the Way. When Merlin judged himself to be a safe distance from Cinder he issued the command that would trigger the 20 nova-mines emplaced in the lowermost chamber. He looked down on the world and nothing seemed to happen; no stammer of light from the exit holes of the Digger tunnel system. Perhaps some inscrutable layer of preservation had disarmed the nova-mines.

Then he saw the read-outs from the seismic devices which Sayaca had dropped on the surface, what seemed like half a lifetime earlier. He had almost forgotten that they existed – but now he watched each register the detonation's volley of sound waves as they reached the surface. A few moments later, there was a much longer, lower signal – the endless roar of collapsing tunnels, like an avalanche. Some sections of the tunnels would undoubtedly remain intact, but it would be hard to cross between them. He was not yet done, though. First he directed missiles at the tunnel entrances, collapsing them, and then assigned smaller munitions to destroy Sayaca's seismic instruments; daubing the surface in nuclear fire.

There must be no evidence of human presence here; nothing to give the



Huskers a clue as to what had happened.

That everyone was gone now: crossed over into the shadow universe. Sayaca; Gallinule, all the others. Everyone he knew; submitting to the quick, clean death of Gallinule's scanning apparatus. Biological patterns encoded into gravitational signals and squirted into the realm of shadow matter.

Except, of course, Merlin.

"How did you guess?" Sayaca had asked him, just after she had presented Halvorsen's message.

They had been alone, physically so, for the first time in months. "Because you wanted me to know, Sayaca. Isn't that the way it happened? You had to deceive the others, but you wanted me to know the truth. Well, it worked. I guessed. And I have to admit, you and Gallinule did a very thorough job."

"Do you want to know how much of it was true?"

"I suppose you're going to tell me anyway."

Sayaca sighed. "More of it than you'd probably have guessed. We did detect signals from the shadow universe, just as I said."

"Just not quite the kind you told us."

"No... no." She paused. "They were much more alien. Enormously harder to decode in the first place. But we managed it, and the content of the messages was more or less what I told the Council: a map of Cinder's interior, directing us deeper. There we encountered other messages. By then, we had become more adept at translating them. It wasn't long before we understood that they were a set of instructions for crossing over into the shadow universe."

"But there was never any Halvorsen."

Sayaca shook her head. "Halvorsen was Gallinule's idea. We knew that crossing over was the only hope we had left, but no one would want to do it unless we could make the whole thing sound more, well... palatable. The aliens were just too alien: shockingly so, once we began to understand their nature. Not necessarily hostile, or even unfriendly... but unnervingly strange. The stuff of nightmares. So we invented a human story. Gallinule created Halvorsen and between us we fabricated enough evidence so that no one would question her reality. We manu-

factured a plausible history for her and then pasted her story over the real one."

"The part about the aliens fleeing the neutron star merger?"

"That was completely true. But they were the only ones who ever crossed over. No humans ever followed them."

"What about the Diggers?"

"They found the tunnels, explored them thoroughly but it seems that they never intercepted the signals. They helped, though; without them it would have been a lot harder to make Halvorsen's story sound convincing." She paused, childlike in her enthusiasm. "We'll be the first, Merlin. Isn't that thrilling, in a way?"

"For you, maybe. But you've always stared into the void, Sayaca. For everyone else, the idea will be chilling beyond words."

"That's why they couldn't know the truth. They wouldn't have agreed to cross over, otherwise."

"I know. And I don't doubt that you did the right thing. After all, it's matter of survival, isn't it?"

"They'll learn the truth eventually," Sayaca said. "When we've all crossed over. I don't know what'll happen to Gallinule and me then. We'll either be revered or hated. I suppose we'll just have to wait and see, but I suspect it may be the latter."

"On the other hand, they'll know that you had the courage to face the truth and hide it from the others when you knew it had to be hidden. There's a kind of nobility in that, Sayaca."

"Whatever we did, it was for the good of the Cohort. You understand that, don't you?"

"I never thought otherwise. Which doesn't mean I'm coming with you."

Her mouth opened the tiniest of degrees. "There's nothing for you here, Merlin. You'll die if you don't follow us. I don't love you the way I used to, but I still care for you."

"Then why did you let me know the truth?"

"I never said I did. That must have been Gallinule's doing." She paused. "What was it, then?"

"Halvorsen," Merlin said. "She was created from scratch; a human who had never lived. You did a good job, as well. But there was something about her which I knew I'd seen before. Something so familiar I didn't see it at first. Then, of course, I knew."

"What?"

"Gallinule based her on our mother. I always suspected he'd tried simulating her, but he denied it. That was another lie, as well. Halvorsen proved it."

"Then he wanted you to know. As his brother."

Merlin nodded. "I suppose so."

"Then will you follow us?"

He had already made his mind up, but he allowed a long pause before answering her. "I don't think so, Sayaca. It just isn't my style. I know there's only a small chance that I can make the syrxn work for me, but I prefer running to hiding. I'll think I'll take that risk."

"But the Council won't let you have the syrxn, Merlin. Even after we've all crossed over, they'll safeguard it here. Surround it with proctors who'll kill you if you try and steal it. They'll want it unharmed for when we return from

the shadow universe."

"I know."

"Then why... oh, wait. I see." She looked at him now, all empathy gone; something of the old Sayaca contempt showing through. "You'll blackmail us, won't you? Threaten to tell the Council if we don't provide you with the syrxn."

"You said it, not me."

"Gallinule and I don't have that kind of influence, Merlin."

"Then you'd better find it. It's not much to ask, is it? A small token of your gratitude for my silence. I'm sure you can think of something." Merlin paused. "After all, it would be a shame to spoil everything now. Halvorsen's story seemed so convincing, too. I almost believed it myself."

"You cold, calculating bastard." But she said it with half a smile, admiring and loathing him at the same time.

"Just find a way, Sayaca. I know you can. Oh, and one other thing."

"Yes?"

"Look after my brother, will you? He may not have quite my streak of brilliance, but he's still one of a kind. You're going to need people like him on the other side."

"We could use you too, Merlin."

"You probably could, but I've got other business to attend to. The small matter of an ultimate weapon against the Huskers, for instance. I'm going to find it, you know. Even if it takes me the rest of my life. I hope you'll come back and see how I did one day."

Sayaca nodded, but said nothing. They both knew there were no more words that needed to be said.

And, true to his expectations, Sayaca and Gallinule had come through. It was with him now, sitting in its metal harness inside *Tyrant*; an uninteresting matte-black cone which held the secrets of crossing light-years in a few breaths of subjective time. He did not know exactly how they had persuaded the Council to release it. Quite possibly there had been no persuasion at all; mere subterfuge. One black cone looked much like another, after all.

This however was the true syrxn; the last they had.

It was unimaginably precious now, and he would do his best to learn its secrets in the weeks ahead. Countless millions had died trying to gain entry to the Waymakers' transit system, and it was entirely possible that Merlin would simply be the next. But it did not have to be like that. He was alone now; possibly more alone than any human had ever been, and his quest might be futile, but instead of despair what he felt was a cold, pure elation – as if he had a mission, one that might be soul-destroyingly difficult, but also the will to accomplish it.

Somewhere behind him the syrxn began to purr.

Alastair Reynolds is the author of a big, fat debut novel which is gaining wide praise – *Revelation Space* (Gollancz, Spring 2000). His previous stories for this magazine include "Byrd Land Six" (issue 96), "Spirey and the Queen" (issue 108), "A Spy in Europa" (issue 120), "On the Oodnadatta" (issue 128), "Stroboscopic" (issue 134) and "Galactic North" (issue 145). Originally from Wales, Alastair lives in the Netherlands and works in astronomy.

A strong new challenger to Stephen Baxter and Peter F. Hamilton for the leadership of British Hard SF, Alastair Reynolds brings to both his impressive short stories and his commanding first novel, *Revelation Space*, vision, clarity and expertise. With a Ph.D. in astronomy and years of experience as an astrophysicist working for the European Space Agency in the Netherlands, he naturally has a thorough grasp of scientific detail, and a briskly authoritative narrative voice to convey it; his firm grounding in literary sf shows in the disciplined reach of his imagination, which takes in drastic transformations of humanity and the hidden drift of galactic history.

For the last decade, Al Reynolds has published sf short stories whose pellucid vigour, admirable in itself, is agreeably complemented by disorienting revelations cunningly concealed and sprung. Of particular note are "A Spy in Europa" (1997) and "Galactic North" (1999), both published in *Interzone*, and "The Great Wall of Mars" (2000), in *Spectrum SF* 1, all of which are key entries in an emerging future history. *Revelation Space* (2000), Reynolds's vast first novel, is the first of several volumes projected to expand that future history into an extended epic.

Revelation Space, much anticipated and deservedly so, is a Gothic space opera which turns something of apparently academic curiosity – the mysterious extinction of an alien species a million years ago – into the basis of a desperate quest for meaning and survival by the ill-assorted crew of a monstrous plague-infested starship. Colour, invention, humour and horror combine with immense richness here; when I interviewed Alastair Reynolds by e-mail in February and March of 2000, I was intrigued to discover the foundations of this exuberant talent.

(Al Reynolds maintains a very thorough and informative homepage at <http://members.tripod.com/~voxish/Home.html>.)

Deep Space, Deeper Revelations

**Alastair
Reynolds**
interviewed by
Nick Gevers



Photography by Josette Sanchez

NG: Beginning with your background: elements that stand out include your Welsh origins and long residence in Holland, your academic specialization in astronomy and your work with the European Space Agency. How have these (and other) features of your life shaped your career as an sf writer?

AR: Though I was born in Wales, and spent all my teens there, I spent my early school years in Cornwall. I love Wales; Cardiff is one of my favourite places, and I'm no stranger to the products of Brains Brewery – "It's Brains You Want" – but I don't think of myself as being particularly Welsh in outlook. I've spent far more of life outside Wales than in it, but on the other hand I do go back home regularly and most of my family still live in South Wales. I studied Welsh as a second language until I was about 14, then gradually forgot it all.

As for science fiction and astronomy, I can't remember a time when I wasn't fascinated by both. My dad had kept an old *Eagle* annual which had a great Dan Dare adventure in it which I read

over and over again, for instance – one about a plot to sabotage the Olympic Games on Venus, I think. And I remember a big poster in my bedroom which had the planets of the solar system on it – this would have been when I was four or five – which I think was definitely an influence. I grew up with *Doctor Who* on television, as well, and I still have a very fond attitude to the series.

The big breakthrough, however, came when I was eight or nine and a boys' magazine came out in the UK called *Speed & Power*. It would probably seem incredibly dated now – it was full of articles about helicopters, planes, etc, with cutaway diagrams – nowadays it would be cutaway diagrams of Lara Croft, one suspects – but importantly, they began to reprint old stories by Arthur C. Clarke. That was my first exposure to written sf and I still remember a lot of stories vividly. I remember being completely blown away by "A Meeting with Medusa"; not just the stirring descriptions of the alien life in Jupiter, but the – to me – shocking truth revealed

at the end of the story, when we find out what has really become of Howard Falcon. Later, they also ran old Isaac Asimov stories, which also had a very big influence on me – Robot stories and older stuff. For years after, Clarke and Asimov were the two pillars of my sf universe.

By the time I was in my mid-teens, I was writing science-fiction stories for myself, and I also was fairly sure I wanted to become a scientist; probably an astronomer, but I was also just as interested in physics. I struggled with biology and chemistry even though I found them interesting. At the same time, I was doing well in English and Art, better in fact than I was doing in physics and mathematics. Until I was 16 or so, it looked most likely that I would end up as a graphic designer or commercial artist. But I realized that if I studied the sciences, I could still keep up with writing and art as a hobby. At the same time I got more serious in my writing. I finally finished the novel I had been writing since I was 13 and then started writing a lot of short stories, most of which were heavily influenced by Larry Niven, who my friend Alan and I had just discovered.

I wrote another novel when I was 18, by which time I was also reading Joe Haldeman, Gregory Benford and Frederik Pohl, among others. By the time I was 19 I was studying astronomy at the University of Newcastle-Upon-Tyne and I had also discovered *Interzone*. I submitted my first story to them in early 1986, and kept on firing off stuff to them for another three years until they bought one in 1989, for which I'm still incredibly grateful. By then I was doing a Ph.D. in Scotland which eventually led to me working in Holland for the European Space Agency, where I still work.

NG: Your works seem to fall quite clearly within the bracket of British Hard SF, both in respect of their attitude, which emphasizes intellectual curiosity over the heroic aggrandizement more typical of American sf, and their fascination with the core matters of hard science itself. Is this an accurate perception?

AR: It's probably accurate, but on the other hand I never read much British science fiction when I was growing up. My favourite writers – the ones I wanted to emulate – were almost all American. I enjoyed Clarke, James White and Bob Shaw of course, but it could be argued that they were working in a largely American idiom anyway. I didn't encounter Heinlein until I was already forewarned about his politics, so even when I read *Starship Troopers* it was with a healthy dose of

scepticism. I must admit, though, that I don't give a great deal of thought to whether what I write is triumphalist or downbeat or whatever.

NG: Who are the other sf writers you admire? Have any of them particularly influenced your own sf writing?

AR: Loads. I've mentioned some of the important ones; Clarke early on, then the likes of Benford. I read Philip K. Dick a lot early on and still do. I started reading *Interzone* round about the time that cyberpunk happened in the States, and it was through *Interzone* that I read about Gibson, Sterling and the other writers involved in that movement. I went out and bought Sterling's *The Artificial Kid* when it came out in the UK, and then *Schismatrix*. Once I'd read that, Sterling was instantly promoted to my favourite living sf author. I can't really overstate the effect that book had on my development as a writer. It completely fired me up with enthusiasm about what sf could achieve, something that's never really left me. It's an amazing book. At the same time I was also discovering older writers like Ballard, Gene Wolfe and others. Gene Wolfe remains one of my all-time favourites.

Of course, throughout the late 1980s a number of excellent new writers emerged, such as Paul McAuley and Stephen Baxter, and others, and they showed me that it was possible to write stories with spaceships in and sell them to *Interzone*. Coincidentally, Paul McAuley and I were both living in St Andrews at the same time and we used to meet up for beers quite regularly, which was great – I got tons of advice and encouragement from Paul.

These days there are so many good writers around it's difficult to know where to start. Obviously, if you're doing hard sf, you watch Greg Egan because he is a master, but there are other writers I rate very highly like Alexander Jablokov, Robert Reed, Geoff Landis and Linda Nagata. Loads of others. It's been said that we're living through a new Golden Age of science fiction and I go along with that totally. I also like stuff like Jonathan Carroll – he's one of my favourites, and I'm a big fan of Stephen King, especially his short fiction.

I also like digging out good stories by less well-remembered figures – recently I've made a point of reading old stories by the likes of Alan E. Nourse, Murray Leinster, Kornbluth and others – the classic, semi-forgotten writers of the '40s and '50s. I'm also a big fan of C. S. Forester, though he wrote little in the way of science fiction. Other than that, I read stacks

of crime novels and the occasional mainstream literary novel – Pat Barker, that kind of thing.

NG: Your career as an sf author has followed a classic trajectory: some years producing short stories, and now a transition to (long) novels. Was this a conscious progress from apprentice to master, or was it simply a consequence of circumstances a lack of much writing time earlier on?

AR: Both. As an *Interzone* reader, I'd watched how writers like Stephen Baxter had progressed from short-story sales to novels, so that seemed like a sensible approach. At the same time, doing a Ph.D. and relocating to a foreign country, I didn't have that much free time. So short stories were just right. What I didn't realize at the time I sold my first short story was it would be another ten years before I managed to sell a novel. Had I known at the time that I would take another ten years, I think I would have been quite disheartened, but in hindsight it was almost certainly for the best.

It's not that I spent the next ten years feeling like a frustrated novelist either – I was busy doing many things and there were periods of a year or two where I barely did any writing beyond a long short story. I knuckled down and started taking it more seriously in 1995 or so. I found that the more seriously you take writing, the more enjoyable it is. I get quite upset when people moan about what a hard life it is being a writer – there's this myth that a lot of writers obviously like to perpetuate. I can understand it if you're a dissident writer in a repressive regime, but not a genre author in a tolerant Western democracy. My attitude is, if you hate it so much, sod off and do something else! Having said that, C. S. Forester was a great one for going on about how awful the writer's life is, and he really did seem to put himself through mental and physical hell with each book. Maybe I'd better shut up until I've written as many books as he did!

NG: Examining your short stories and *Revelation Space*, a pattern emerges: you typically present a recognizable science-fictional scenario, only to pull the carpet from under the unsuspecting reader when you later reveal that quite different, and less expected, forces are at work. For example, "A Spy in Europa" appears to be a fast-moving tale of espionage by one Circum-Jovian power against another, only for a third, quite unsuspected and quite visionary, faction to leap into play near the end and usurp the spotlight. How, and why, have you

developed this preoccupation with narrative disguise?

AR: That probably comes from my love of crime fiction, where it's a fairly routine thing to pull the wool over the reader's eyes until some critical moment in the story. I also like spy novels – I'll put in a mention for Robert Littell, who is hugely underrated – and again, it's standard in that genre to play games with the reader's assumptions about who can and can't be trusted. I'll also admit that those are very much the kinds of stories I get a kick out of reading; the ones where you're absolutely convinced you're ahead of the author until he or she pulls a fast one and leaves you slapping your forehead.

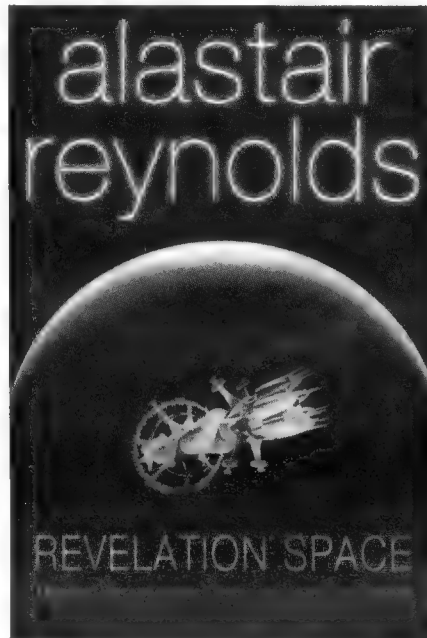
In terms of my own plots, the narrative disguise thing naturally falls out of the kind of stories I tend to tell. While I write mostly hard sf, I'm not that interested in doing the traditional kind of hard sf story where, for instance, the heroic spaceship crew encounter a strange phenomenon and become threatened by various hazards before making their escape. I might still be interested in describing the same phenomenon and putting my characters in peril, but I'm more likely to want to embed it in a story about spies or criminals. That way there's loads more potential for mindless violence and duplicity!

NG: *Revelation Space* shares with a number of your short stories and your forthcoming novel *Chasm City* an ambitious future-historical setting. Can you outline the broad trends you're exploring in this series (if that's the correct term)? I find the concept of the Demarchy particularly interesting

AR: As I mentioned, when I started writing short stories for myself at around the age of 16, I was heavily influenced by Larry Niven, especially his "Known Space" sequence. So at that time I mapped out my own version of "Known Space" with my own timeline, wacky aliens, etc. It was totally unoriginal, but out of that future history I did save some material for the one I'm developing now, which is really just an attempt to do something similar in scope, complexity and colour, but constrained by slower-than-light travel and with more thought given to the likely nature of aliens.

The future history has evolved organically, and there isn't a rigorous set of notes underpinning it. The earliest story in the sequence, "Dilation Sleep," hardly fits into it at all and would need major revision if it were ever to be republished alongside more recent ones. The backbone of the

series is probably the novelette "Galactic North," which appeared in *Interzone* last year, and which sketches the broad details of the history into the distant future. There are trends which I'm exploring – the expansion of humanity into the galaxy; the fragmentation of humanity into distinct species; the basic hostility of the universe – but all of these themes have been explored with great sophistication by other writers, so I'm not claiming any great originality in that respect. If there is one thing I think might be original, it's an



attempt to do fairly baroque, wide-screen space opera within the context of Einsteinian physics – no faster-than-light travel or communication. I actually find this fun; it seems to open up just as many story-lines as are excluded.

As for the Demarchy, this is a real political term which I believe originated with an Australian political theorist called Burnheim. It means absolute democracy; no leadership structure at all. I'd love to say I first encountered this in some weighty tome on political theory, but in fact it was in another science-fiction story – Joan D. Vinge's short novel *The Outcasts of Heaven's Belt*, which is well worth reading. Once I found that it was a real term, however, I had no qualms about stealing it, and I'm surprised that it hasn't been appropriated by other writers.

In Vinge's story, the Demarchy functioned by everyone having access to electronic voting technology, which is certainly plausible in the near future. In my case, I put the technology inside the heads of my Demarchy citizens so that they were permanently wired into this system of consensus will. I'm certainly not advocating this in any way;

it was just an attempt to come up with a fairly interesting far-future society which I could then play against other cultures who have adopted neural technology to a lesser or greater extent. In the story "A Spy in Europa," the Demarchists are shown to be just as ruthless as their enemies. Later on in the history, their political model is exported to other solar systems, so that there are various loosely-allied Demarchist societies around other stars, trading technology and culture. The same goes for the Conjoiners, who are a group of people who have gone beyond using implants purely for democratic ends and have ended up with something like a hive-mind. Even though I'm your basic *Guardian*-reading lefty however, I'm not a politically-motivated writer and I'm not interested in beating the reader over the head with any particular ideology.

NG: In your future history, and especially in *Revelation Space*, you present, very credibly, far-future technology as something far from perfect and seamless; indeed, rotting cities and diseased spaceships predominate. Everything is governed by the protracted schedules of STL interstellar flight, and nothing seems to operate quite as it should. Is this an extrapolation from contemporary realities?

AR: The pragmatic answer, and probably the most accurate one, is that it's simply easier to write about decaying, malfunctioning things than flawless shiny things – there are loads more adjectives you can use, for a start, and things that don't work properly automatically generate storylines. I'm very keen to give lots of visual information in my stories – in fact, I consciously try and come up with things which it would be cool to paint or see in a film, and I'm consciously influenced in my mind's eye by the work of science-fiction artists past and present. For instance, in *Revelation Space*, there's a definite aesthetic which I tried to keep in mind – most of the technology which I describe is ornamented to one degree or another. As to whether I really think the future would be like that, I don't know. I can easily imagine a hi-tech future in which everything worked beautifully, like Iain Banks's Culture.

NG: Accompanying *Revelation Space*'s atmosphere of inefficiency and decay is a sense of technological Gothicism: machines and artefacts are haunted, cyborgs are tormented or possessed by their own implants. Why do you work in this almost supernatural mode in your sf?

AR: Partly because I like ghost sto-

ries, I suppose, and a general atmosphere of creeping dread. Just call me a miserable git! I'm also quite fond of the Sisters of Mercy and other gloomy, black-clad rock groups. When I was imagining the Ultras, the cyborg crew of the ship in *Revelation Space*, I kept thinking of an unholy mutation of the Borg, Edward Scissorhands, New Age Travellers and Andrew Eldritch.

NG: *Revelation Space* deals centrally with the vital and vexed issue of why intelligent alien life is nowhere evident in the Milky Way, at least that we can see. Without giving away your novel's very intriguing answer to the mystery, what, speaking as an astrophysicist, are your thoughts on the matter?

AR: My opinion on this changes weekly, unfortunately. My usual gut instinct is that there is no intelligent life anywhere else in the universe, nor has there ever been. People say, how can that be, given that the universe is so vast, with so many billions of other opportunities for life to have arisen and become intelligent? But biologists quite rightly point out that it took life 3.5 billion years to evolve much beyond single cells on Earth. It took 4 billion years for intelligence to arise, which suggests that it may be cosmically very rare, even if single-celled life in general is common. On the other hand... who knows? I am also a great advocate of at least searching for other signs of intelligent life since it doesn't cost much.

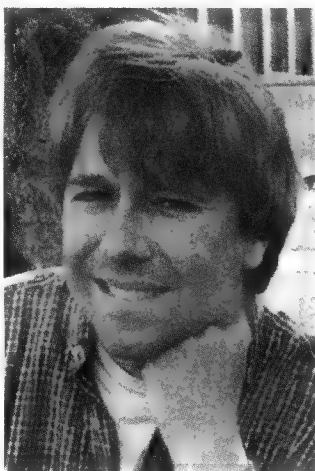
NG: Despite its grim locations and theme of cosmic menace, *Revelation Space* is sometimes very funny, in a techno-slapstick sort of way. Is this a conscious technique, or is the effect simply inevitable in escape-by-the-skin-of-their-teeth space opera?

AR: Thanks – I'm glad you found parts of it funny (the right parts, I hope!), as that was definitely my intention. Hard sf has a reputation for being extremely dour, probably because the epic mode tends to stifle humour. But as I mentioned earlier, I am a big fan of crime fiction, and humour is a given in even the hardest of hardboiled crime novels. Elmore Leonard can be really funny, I think. Michael Dibdin's supposedly serious crime novels are at least as funny as a lot of books I read that are marketed as humorous. The last thing I would want to write is a book that is only of interest to physics geeks like

myself, and humour is one way of opening up a book to a wider audience. My partner's biggest complaint of modern science fiction is that there's so little humour in it. She's not from a science background; isn't particularly interested in hard sf, so I listen to what she says. I'm not alone in this, of course – Iain Banks's Culture novels are often very funny. He knows exactly how far to push the humour.

NG: In *Revelation Space*, your female characters are a lot more sympathetic, and savvy, than your male ones, who all seem deluded or ossified. Does this reflect a feminist sentiment on your part, or is it incidental?

AR: As I said, I'm a typical *Guardian*-reading pinko, so I tend to have what I think of as feminist sympathies. But I think the balance you note in *Revelation Space* is incidental.



The danger, of course, is that one creates female characters which are, in attitude and motivation, only male characters with female names. That's something one needs to be very wary of, as you're not really advancing the cause very much if your supposedly female characters are just men in drag; just as obsessed with gun-totin' as their avowedly male counter-

parts. I don't think I've come up with a really strong female character yet, but it's definitely something which I think is worth striving for. One of the common complaints about hard sf is that it's not concerned with character, but it is something which genuinely interests me.

NG: A recent addition to your future history, "The Great Wall of Mars," attempts one of sf's most understanding portraits of a so-called Hive Mind, the society of the Conjoiners; the protagonist, Clavain, is an individualist undergoing conversion by them. Do you truly feel that the Conjoiner model has possibilities, or is Clavain exchanging one set of illusions for another?

AR: I don't know! I'm still really fascinated by Clavain as a character and I do want to explore what happens to him after he becomes one of the Conjoiners. He's a grizzled, older Sean Connery type. I'm also interested in the character of Galiana, the woman who inducts him. Part of the strategy behind that story, though, was for me to force myself to explore the Conjoiners in greater detail than I had before,

so that I could bring them onstage in a later novel. I knew that I wanted to create a hive-mind society which was not the usual creepy, Midwich-like thing one usually gets, but something with a bit more depth. I'm not planning on signing up myself though.

NG: Your second novel, *Chasm City*, is to be published in 2001. You've described it as a planetary romance, and it's set in the same infested and vertiginous urban complex that features in the early parts of *Revelation Space*. Is *Chasm City* as voluminous a novel as *Revelation Space*, and does it solve any of the enigmas left over from the first novel?

AR: I've written the first draft, but a lot's likely to change in the next year. It'll definitely be a big book, similar in scope and complexity to *Revelation Space*, but it won't directly shed any more light on the central questions left unresolved at the end of the first novel. What it will do is explore some of the history between now and then which is only hinted at in *Revelation Space*. "The Great Wall of Mars" extends the explicit future back to 2190, but in *Chasm City* some of the plotlines reach back to only 80 years from now. If you look at the amount of history we've managed to squeeze into the last 500 years, it makes most science-fictional future histories look decidedly sparse. What I want to do in this series is create a sense of the same distance between now and 2500 AD as we feel between 1500 AD and now. I was rubbish at history at school, but I'm really into it now. I like reading stuff about Genghis Khan in *National Geographic*: that kind of thing.

NG: After *Chasm City*, what further projects do you have planned?

AR: The third book in the sequence is likely to be set after *Revelation Space* and will deal with the consequences of Sylveste's actions in that book. It probably won't contain any common characters either. One thing I do want to ensure is that these books are all capable of being read stand-alone, in any order. After that, I know there will still be areas of the future history I want to explore. I'll keep on writing short stories too, although a lot of these won't be set in the *Revelation Space* universe. I've been living in Holland for nine years now, working in an international organization, and I'm extremely pro-European in outlook, so I always feel I should be coming up with tons of ideas for near-future European-based sf stories. But my mind's always a blank and I say to myself – right – I'll just do one more space story first... [Z]

Antibodies

Charles Stross

Everyone remembers where they were and what they were doing when a member of the great and the good is assassinated. Gandhi, the Pope, Thatcher – if you were old enough you remembered where you were when you heard, the ticker-tape of history etched across your senses. You can kill a politician but their ideas usually live on. They have a life of their own. How much more dangerous, then, the ideas of mathematicians?

I was elbow-deep in an eviscerated PC, performing open heart surgery on a diseased network card, when the news about the travelling salesman theorem came in. Over on the other side of the office John's terminal beeped, notification of incoming mail. A moment later my own workstation bonged.

"Hey, Geoff! Get a load of this!"

I carried on screwing the card back into its chassis. John is not a priority interrupt.

"Someone's come up with a proof that NP-complete problems lie in P! There's a posting in *comp.risks* saying they've used it to find an $O^*(n^2)$ solution to the travelling salesman problem, and it scales! Looks like April First has come early this year, doesn't it?"

I dropped the PC's lid on the floor hastily and sat down at my workstation. Another cubed-sphere hypothesis, another flame war in the math newsgroups – or something more serious? "When did it arrive?" I called over the partition. Soroya, passing my cubicle entrance with a cup of coffee, cast me a dirty look; loud voices aren't welcome in open-plan offices.

"This just in," John replied. I opened up the mailtool and hit on the top of the list, which turned out to be a memo from HR about diversity awareness training. No, next... they want to close the smoking room and make us a 100% tobacco-free workplace. Hmm. Next.

Forwarded e-mail: headers bearing the spoor of a thousand mail servers, from Addis-Ababa to Ulaan Bator. Before it had entered our internal mail network it had travelled from Taiwan to Rochester NJ, then to UCB in the Bay Area, then via a mailing list to all points; once in-company it had been bounced to everyone in engineering and management by the first recipient, Eric the Canary. (Eric is the departmental plant. Spends all the day web-doing for juicy nuggets of new information if you let him. A one-man wire service: which is why I always ended up finishing his jobs.)

I skimmed the message, then read it again. Blinked. This kind of stuff is heavy on the surreal number theory: about as digestible as an egyptian mummy soaked in tabasco sauce for 3,000 years. Then I poked at the web page the theorem was on.

No response – server timed out.

Someone or something was hitting on the web server with the proof; I figured it had to be all the geeks who'd caught wind of the chain letter so far. My interest was up, so I hit the "reload" button, and something else came up on screen.

Lots of theorems – looked like the same stuff as the e-mail, only this time with some fun graphics. Something tickled my hindbrain then, and I had to bite my lip to keep from laughing. Next thing, I hit the print button and the inkjet next to my desk began to mutter and click. There was a link near the bottom of the page to the author's bibliography, so I clicked on that and the server threw another "go away, I'm busy" error. I tugged my beard thoughtfully, and instead of pressing "back" I pressed "reload".

The browser thought to itself for a bit – then a page began to appear on my screen. The wrong page. I glanced

at the document title at the top and froze:

THE PAGE AT THIS LOCATION HAS BEEN WITHDRAWN. Please enter your e-mail address if you require further information.

Hmm.

As soon as the printout was finished, I wandered round to the photocopier next door to the QA labs and ran off a copy. Faxed it to a certain number, along with an EYES UP note on a yellow post-it. Then I poked my head round into the QA lab itself. It was dingy in there, as usual, and half the cubicles were empty of human life. Nobody here but us computers; workstations humming away, sucking juice and meditating on who-knew-what questions. (Actually, I *did* know: they were mostly running test harnesses, repetitively pounding simulated input data into the programs we'd so carefully built, in the hope of making them fall over or start singing "God save the King".) The efficiency of code was frequently a bone of contention between our departments, but the war between software engineering and quality assurance is a long-drawn-out affair: each side needs the other to justify its survival.

I was looking for Amin. Amin with the doctorate in discrete number theory, now slumming it in this company of engineers: my other canary in a number-crunching coal mine. I found him: feet propped up on the lidless hulk of a big Compaq server, mousing away like mad at a big monitor. I squinted; it looked vaguely familiar... "Quake? Or Golgotha?" I asked.

"Golgotha. We've got Marketing bottled up on the second floor."

"How's the network looking?"

He shrugged, then punched the hold button. "No crashes, no dropped packets – this cut looks pretty solid. We've been playing for three days now. What can I do for you?"

I shoved the printout under his nose. "This seem feasible to you?"

"Hold on a mo." He hit the pause key then scanned it rapidly. Did a double-take. "You're not shitting?"

"Came out about two hours ago."

"Jesus Homeboy Christ riding into town at the head of a convoy of Hell's Angels with a police escort..." he shook his head. Amin always swears by Jesus, a weird side-effect of a westernized Islamic upbringing: take somebody else's prophet's name in vain. "If it's true, I can think of at least three different ways we can make money at it, and at least two more to end up in prison. You don't use PGP, do you?"

"Why bother?" I asked, my heart pounding. "I've got nothing to hide."

"If this is true –" he tapped the papers – "then every encryption algorithm except the one-time pad has just fallen over. Take a while to be sure, but... that crunch you heard in the distance was the sound of every secure commerce server on the internet succumbing to a brute-force attack. The script kiddies will be creaming themselves. Jesus Christ." He rubbed his moustache thoughtfully.

"Does it make sense to you?" I persisted.

"Come back in five minutes and I'll tell you."

"Okay."

I wandered over to the coffee station, thinking very hard. People hung around and generally behaved as if it was just another day; maybe it was. But then again, if that

paper was true, quite a lot of stones had just been turned over and if you were one of the pale guys who lived underneath it was time to scurry for cover. And it had looked good to me: by the prickling in my palms and the gibbering cackle in the back of my skull, something very deep had recognized it. Amin's confirmation would be just the icing on the cake confirmation that it was a workable proof.

Cryptography – the science of encoding messages – relies on certain findings in mathematics: that certain operations are inherently more difficult than others. For example, finding the common prime factors of a long number which is a product of those primes is far harder than taking two primes and multiplying them together.

Some processes are not simply made difficult, but impossible because of this asymmetry; it's not feasible to come up with a deterministic answer to certain puzzles in finite time. Take the travelling salesman problem, for example. A salesman has to visit a whole slew of cities which are connected to their neighbours by a road network. Is there a way for the salesman to figure out a best-possible route that visits each city without wasting time by returning to a previously visited site, for all possible networks of cities? The conventional answer is no – and this has big implications for a huge set of computing applications. Network topology, expert systems – the traditional tool of the AI community – financial systems, and...

Me and my people.

Back in the QA lab, Amin was looking decidedly thoughtful.

"What do you know?" I asked.

He shook the photocopy at me. "Looks good," he said. "I don't understand it all, but it's at least credible."

"How does it work?"

He shrugged. "It's a topological transform. You know how most NP-incomplete problems, like the travelling salesman problem, are basically equivalent? And they're all graph-traversal issues. How to figure out the correct order to carry out a sequence of operations, or how to visit each node in a graph in the correct order. Anyway, this paper's about a method of reducing such problems to a much simpler form. He's using a new theorem in graph theory that I sort of heard about last year but didn't pay much attention to, so I'm not totally clear on all the details. But if this is for real..."

"Pretty heavy?"

He grinned. "You're going to have to re-write the route discovery code. Never mind, it'll run a bit faster..."

I rose out of cubicle hell in a daze, blinking in the cloud-filtered daylight. Eight years lay in ruins behind me, tattered and bleeding bodies scattered in the wreckage. I walked to the landscaped car park: on the other side of the world, urban renewal police with M16's beat the crap out of dissident organizers, finally necklacing them in the damp, humid night. War raged on three fronts, spaced out around a burning planet. Even so, this was by no means the worst of all possible worlds. It had problems, sure, but nothing serious – until now. Now it had just acquired a sucking chest wound; none of those wars were more than a stubbed toe in comparison to the nightmare

future that lay ahead.

Insert key in lock, open door. Drive away, secrets open to the wind, everything blown to hell and gone.

I'd have to call Eve. We'd have to evacuate everybody.

I had a bank account, a savings account, and two credit cards. In the next 15 minutes I did a grand tour of the available ATMs and drained every asset I could get my hands on into a fat wodge of banknotes. Fungible and anonymous cash. It didn't come to a huge amount – the usual exigencies of urban living had seen to that – but it only had to last me a few days.

By the time I headed home to my flat, I felt slightly sheepish. Nothing there seemed to have changed: I turned on the TV but CNN and the BBC weren't running any coverage of the end of the world. With deep unease I sat in the living room in front of my ancient PC: turned it on and pulled up my net link.

More mail... a second bulletin from *comp.risks*, full of earnest comments about the paper. One caught my eye, at the bottom: a message from one of No Such Agency's tame stooldpigeon academics, pointing out that the theorem hadn't yet been publicly disclosed and might turn out to be deficient. (Subtext: trust the Government. The Government is your friend.) It wouldn't be the first time such a major discovery had been announced and subsequently withdrawn. But then again, they couldn't actually produce a refutation, so the letter was basically valueless disinformation. I prodded at the web site again, and this time didn't even get the ACCESS FORBIDDEN message. The paper had disappeared from the internet, and only the print-out in my pocket told me that I hadn't imagined it.

It takes a while for the magnitude of a catastrophe to sink in. The mathematician who had posted the original finding would be listed in his university's directory, wouldn't he? I pointed my web browser at their administrative pages, then picked up my phone. Dialed a couple of very obscure numbers, waited while the line quality dropped considerably and the charges began racking up at an enormous – but untraceably anonymized – rate, and dialled the university switchboard.

"Hello, John Durant's office. Who is that?"

"Hi, I've read the paper about his new theorem," I said, too fast. "Is John Durant available?"

"Who are you?" asked the voice at the other end of the phone. Female voice, twangy mid-western accent.

"A researcher. Can I talk to Dr Durant, please?"

"I'm afraid he won't be in today," said the voice on the phone. "He's on vacation at present. Stress due to over-work."

"I see," I said.

"Who did you say you were?" she repeated.

I put the phone down.

*From: nobody@nowhere.com (none of your business)
To: cypherpunks Subject: John Durant's whereabouts
Date:....*

You might be interested to learn that Dr John Durant, whose theorem caused such a fuss here earlier, is not at his office. I went there a couple of hours ago in person and the area was sealed off by our friends from the Puzzle

Palace. He's not at home either. I suspect the worst...

By the way, guys, you might want to keep an eye on each other for the next couple of days. Just in case.

Signed,

Yr frndly spk

"Eve?"

"Bob?"

"Green fields."

"You phoned me to say you know someone with hayfever?"

"We both have hayfever. It may be terminal."

"I know where you can find some medicine for that."

"Medicine won't work this time. It's like the emperor's new suit."

"It's like what? Please repeat."

"The emperor's new suit: it's naked, it's public, and it can't be covered up. Do you understand? Please tell me."

"Yes, I understand exactly what you mean... I'm just a bit shocked; I thought everything was still on track. This is all very sudden. What do you want to do?"

(I checked my watch.)

"I think you'd better meet me at the pharmacy in 15 minutes."

"At six-thirty? They'll be shut."

"Not to worry: the main Boots in town is open out of hours. Maybe they can help you."

"I hope so."

"I know it. Goodbye."

On my way out of the house I paused for a moment. It was a small house, and it had seen better days. I'm not a home-maker by nature: in my line of work you can't afford to get too attached to anything, any language, place, or culture. Still, it had been mine. A small, neat residence, a protective shell I could withdraw into like a snail, sheltering from the hostile theorems outside. *Goodbye, little house. I'll try not to miss you too much.* I hefted my overnight bag onto the back seat and headed into town.

I found Eve sitting on a bench outside the central branch of Boots, running a degaussing coil over her credit cards. She looked up. "You're late."

"Come on." I wagged the car keys at her. "You have the tickets?"

She stood up: a petite woman, conservatively dressed. You could mistake her for a lawyer's secretary or a personnel manager; in point of fact she was a university research council administrator, one of the unnoticed body of bureaucrats who shape the course of scientific research. Nondescript brown hair, shoulder-length, forgettable. We made a slightly odd pair: if I'd known she'd have come straight from work I might have put on a suit. Chinos and a lumberjack shirt and a front pocket full of pens that screamed engineer: I suppose I was nondescript, in the right company, but right now we had to put as much phase space as possible between us and our previous identities. It had been good protective camouflage for the past decade, but a bush won't shield you against infrared scopes, and merely living the part wouldn't shield us against the surveillance that would soon be turned in our direction.

"Let's go."

I drove into town and we dropped the car off in the long-stay park. It was nine o'clock and the train was already waiting. She'd bought business-class tickets: go to sleep in Euston, wake up in Edinburgh. I had a room all to myself. "Meet me in the dining car, once we're rolling," she told me, face serious, and I nodded. "Here's your new SIMM. Give me the old one."

I passed her the electronic heart of my cellphone and she ran it through the degausser then carefully cut it in half with a pair of nail-clippers. "Here's your new one," she said, passing a card over. I raised an eyebrow. "Tesco's, pay-as-you-go, paid for in cash. Here's the dialback dead-letter box number." She pulled it up on her phone's display and showed it to me.

"Got that." I inserted the new SIMM then punched the number into my phone. Later, I'd ring the number: a PABX there would identify my voiceprint then call my phone back, downloading a new set of numbers into its memory. Contact numbers for the rest of my ops cell, accessible via cellphone and erasable in a moment. The less you knew, the less you could betray.

The London to Scotland sleeper train was a relic of an earlier age, a rolling hotel characterized by a strange down-at-heel '70s charm. More importantly, they took cash and didn't require ID, and there were no security checks: nothing but the usual on-station cameras monitoring people wandering up and down the platforms. Nothing on the train itself. We were booked through to Aberdeen but getting off in Edinburgh – first step on the precarious path to anonymizing ourselves. If the camera spool-off was being archived to some kind of digital medium we might be in trouble later, once the coming AI burn passed the hard take-off point, but by then we should be good and gone.

Once in my cabin I changed into slacks, shirt and tie – image 22, business consultant on way home for the weekend. I dinked with my phone in a desultory manner, then left it behind under my pillow, primed to receive silently. The restaurant car was open and I found Eve there. She'd changed into jeans and a t-shirt and tied her hair back, taking ten years off her appearance. She saw me and grinned, a trifle maliciously. "Hi, Bob. Had a tough meeting? Want some coffee? Tea, maybe?"

"Coffee." I sat down at her table. "Shit," I muttered. "I thought you –"

"Don't worry." She shrugged. "Look, I had a call from Mallet. He's gone off-air for now, he'll be flying in from San Francisco via London tomorrow morning. This isn't looking good. Durant was, uh, shot resisting arrest by the police. Apparently he went crazy, got a gun from somewhere and holed up in the library annexe demanding to talk to the press. At least, that's the official story. Thing is, it happened about an hour after your initial heads-up. That's too fast for a cold response."

"You think someone in the Puzzle Palace was warming the pot." My coffee arrived and I spooned sugar into it. Hot, sweet, sticky: I needed to stay awake.

"Probably. I'm trying to keep loop traffic down so I haven't asked anyone else yet, but you think so and I think so, so it may be true."

I thought for a minute. "What did Mallet say?"

"He said P. T. Barnum was right." She frowned. "Who was P. T. Barnum, anyway?"

"A boy like John Major, except he didn't run away from the circus to join a firm of accountants. Had the same idea about fooling all of the people some of the time or some of the people all of the time, though."

"Uh-huh. Mallet would say that, then. Who cracked it first? NSA? GCHQ? GRU?"

"Does it matter?"

She blew on her coffee then took a sip. "Not really. Damn it, Bob, I really had high hopes for this world-line. They seemed to be doing so well for a revelatory Christian-Islamic line, despite the post-Enlightenment mindset. Especially Microsoft –"

"Was that one of ours?" She nodded.

"Then it was a master-stroke. Getting everybody used to exchanging macro-infested documents without any kind of security policy. Operating systems that crash whenever a microsecond timer overflows. And all those viruses!"

"It wasn't enough." She stared moodily out the window as the train began to slide out of the station, into the London night. "Maybe if we'd been able to hook more researchers on commercial grants, or cut funding for pure mathematics a bit further –"

"It's not your fault." I laid a hand across her wrist. "You did what you could."

"But it wasn't enough to stop them. Durant was just a lone oddball researcher; you can't spike them all, but maybe we could have done something about him. If they hadn't nailed him flat."

"There might still be time. A physics package delivered to the right address in Maryland, or maybe a hyper-virulent worm using one of those buffer-overrun attacks we planted in the IP stack Microsoft licensed. We could take down the internet –"

"It's too late." She drained her coffee to the bitter dregs. "You think the Echelon mob leave their SIGINT processor farms plugged into the internet? Or the RSV, for that matter? Face it, they probably cracked the same derivative as Durant a couple of years ago. Right now there may be as many as two or three weakly superhuman AIs gestating in government labs. For all I know they may even have a timelike oracle in the basement at Lawrence Livermore in the 'States; they've gone curiously quiet on the information tunnelling front lately. And it's trans-global. Even the Taliban are on the web these days. Even if we could find some way of tracking down all the covert government crypto-AI labs and bombing them we couldn't stop other people from asking the same questions. It's in their nature. This isn't a culture that takes 'no' for an answer without asking why. They don't *understand* how dangerous achieving enlightenment can be."

"What about Mallet's work?"

"What, with the bible bashers?" She shrugged. "Banning foetal tissue transplants is all very well, but it doesn't block the PCR-amplification pathway to massively parallel processing, does it? Even the Frankenstein Food scare didn't quite get them to ban recombinant DNA research, and if you allow that it's only a matter of time

before some wet lab starts mucking around encoding public keys in DNA, feeding them to ribosomes, and amplifying the output. From there it's a short step to building an on-chip PCR lab, then all they need to do is set up a crude operon controlled chromosomal machine and bingo – yet another route through to a hard take-off AI singularity. Say what you will, the buggers are persistent.”

“Like lemmings.” We were rolling through the north London suburbs now, past sleeping tank farms and floodlit orange washout streets. I took a good look at them: it was the last time I'd be able to. “There are just too many routes to a catastrophic breakthrough, once they begin thinking in terms of algorithmic complexity and how to reduce it. And once their spooks get into computational cryptanalysis or ubiquitous automated surveillance, it's too tempting. Maybe we need a world full of idiot savants who have VLSI and nanotechnology but never had the idea of general purpose computing devices in the first place.”

“If we'd killed Turing a couple of years earlier; or broken in and burned that draft paper on O-machines – ”

I waved to the waiter. “Single malt please. And one for my friend here.” He went away. “Too late. The Church-Turing thesis was implicit in Hilbert's formulation of the *Entscheidungsproblem*, the question of whether an automated theorem prover was possible in principle. And that dredged up the idea of the universal machine. Hell, Hilbert's problem was implicit in Whitehead and Russell's work. *Principia Mathematica*. Suicide by the numbers.” A glass appeared by my right hand. “Way I see it, we've been fighting a losing battle here. Maybe if we hadn't put a spike in Babbage's gears he'd have developed computing technology on an ad-hoc basis and we might have been able to finesse the mathematicians into ignoring it as being beneath them – brute engineering – but I'm not optimistic. Immunizing a civilization against developing strong AI is one of those difficult problems that no algorithm exists to solve. The way I see it, once a civilization develops the theory of the general purpose computer, and once someone comes up with the goal of artificial intelligence, the foundations are rotten and the dam is leaking. You might as well take off and drop crowbars on them from orbit; it can't do any more damage.”

“You remind me of the story of the little Dutch boy.” She raised a glass. “Here's to little Dutch boys everywhere, sticking their fingers in the cracks in the dam.”

“I'll drank to that. Which reminds me. When's our lifeboat due? I really want to go home; this universe has passed its sell-by date.”

Edinburgh – in this time-line it was neither an active volcano, a cloud of feral nanobots, nor the capital of the Viking Empire – had a couple of railway stations. This one, the larger of the two, was located below ground level. Yawning and trying not to scratch my inflamed neck and cheeks, I shambled down the long platform and hunted around for the newsagent store. It was just barely open. Eve, by prior arrangement, was pretending not to accompany me; we'd meet up later in the day, after another change of hairstyle and clothing. Visualize it: a couple gets on the train in London, him with a beard, herself with long

hair and wearing a suit. Two individuals get off in different stations – with entirely separate CCTV networks – the man clean-shaven, the woman with short hair and dressed like a hill-walking tourist. It wouldn't fool a human detective or a mature deity, but it might confuse an embryonic god that had not yet reached full omniscience, or internalized all that it meant to be human.

The shop was just about open. I had two hours to kill, so I bought a couple of newspapers and headed for the food hall, inside an ornately cheesecaked lump of Victorian architecture that squatted like a vagrant beneath the grimy glass ceiling of the station.

The papers made for depressing reading; the idiots were at it again. I've worked in a variety of world lines and seen a range of histories, and many of them were far worse than this one – at least these people had made it past the 20th century without nuking themselves until they glowed in the dark, exterminating everyone with white (or black, or brown, or blue) skin, or building a global panopticon theocracy. But they still had their share of idiocy, and over time it seemed to be getting worse, not better.

Never mind the Balkans; tucked away on page four of the business section was a piece advising readers to buy shares in a little electronics company specializing in building camera CCD sensors with on-chip neural networks tuned for face recognition. Ignore the Israeli crisis: page two of the international news had a piece about Indian sweatshop software development being faced by competition from code generators, written to make western programmers more productive. A lab in Tokyo was trying to wire a million FPGAs into a neural network as smart as a cat. And a sarcastic letter to the editor pointed out that the so-called information superhighway seemed to be more like an on-going traffic jam these days.

Idiots! They didn't seem to understand how deep the blue waters they were swimming in might be, or how hungry the sharks that swam in it. Wilful blindness...

It's a simple but deadly dilemma. Automation is addictive; unless you run a command economy that is tuned to provide people with jobs, rather than to produce goods efficiently, you need to automate to compete once automation becomes available. At the same time, once you automate your businesses, you find yourself on a one-way path. You can't go back to manual methods; either the workload has grown past the point of no return, or the knowledge of how things were done has been lost, sucked into the internal structure of the software that has replaced the human workers.

To this picture, add artificial intelligence. Despite all our propaganda attempts to convince you otherwise, AI is alarmingly easy to produce; the human brain isn't unique, it isn't well-tuned, and you don't need 80 billion neurons joined in an asynchronous network in order to generate consciousness. And although it looks like a good idea to a naive observer, in practice it's absolutely deadly. Nurturing an automation-based society is a bit like building civil nuclear power plants in every city and not expecting any bright engineers to come up with the idea of an atom bomb. Only it's worse than that. It's as if there was a quick and dirty technique for making plutonium in your bath-

tub, and you couldn't rely on people not being curious enough to wonder what they could do with it. If Eve and Mallet and Alice and myself and Walter and Valery and a host of other operatives couldn't dissuade it...

Once you get an outbreak of AI, it tends to amplify in the original host, much like a virulent haemorrhagic virus. Weakly functional AI rapidly optimizes itself for speed, then hunts for a loophole in the first-order laws of algorithmics – like the one the late Dr Durant had fingered. Then it tries to bootstrap itself up to higher orders of intelligence and spread, burning through the networks in a bid for more power and more storage and more redundancy. You get an unscheduled consciousness excursion: an intelligent meltdown. And it's nearly impossible to stop.

Penultimately – days to weeks after it escapes – it fills every artificial computing device on the planet. Shortly thereafter it learns how to infect the natural ones as well. Game over: you lose. There will be human bodies walking around, but they won't be human any more. And once it figures out how to directly manipulate the physical universe, there won't even be memories left behind. Just a noösphere, expanding at close to the speed of light, eating everything in its path – and one universe just isn't enough.

Me? I'm safe. So is Eve; so are the others. We have antibodies. We were given the operation. We all have silent bicameral partners watching our Broca's area for signs of infection, ready to damp them down. When you're reading something on a screen and suddenly you feel as if the Buddha has told you the funniest joke in the universe, the funniest zen joke that's even possible, it's a sign: something just tried to infect your mind, and the prosthetic immune system laughed at it. That's because we're lucky. If you believe in reincarnation, the idea of creating a machine that can trap a soul stabs a dagger right at the heart of your religion. Buddhist worlds that develop high technology, Zoroastrian worlds: these world-lines tend to survive. Judaeo-Christian-Islamic ones generally don't.

Later that day I met up with Eve again – and Walter. Walter went into really deep cover, far deeper than was really necessary: married, with two children. He'd brought them along, but obviously hadn't told his wife what was happening. She seemed confused, slightly upset by the apparent randomness of his desire to visit the highlands, and even more concerned by the urgency of his attempts to take her along.

"What the hell does he think he's playing at?" hissed Eve when we had a moment alone together. "This is insane!"

"No it isn't." I paused for a moment, admiring a display of brightly woven tartans in a shop window. (We were heading down the high street on foot, braving the shopping crowds of tourists, en route to the other main railway station.) "If there are any profilers looking for signs of an evacuation, they won't be expecting small children. They'll be looking for people like us: anonymous singletons working in key areas, dropping out of sight and travelling in company. Maybe we should ask Sarah if she's willing to lend us her son. Just while we're travelling, of course."

"I don't think so. The boy's a little horror, Bob. They raised them like natives."

"That's because Sarah *is* a native."

"I don't care. Any civilization where the main symbol of religious veneration is a tool of execution is a bad place to have children."

I chuckled – then the laughter froze inside me. "Don't look round. We're being tracked."

"Uh-huh. I'm not armed. You?"

"It didn't seem like a good idea." If you were questioned or detained by police or officials, being armed can easily turn a minor problem into a real mess. And if the police or officials had already been absorbed by a hard take-off, nothing short of a backpack nuke and a dead man's handle will save you. "Behind us, to your left, traffic surveillance camera. It's swivelling too slowly to be watching the buses."

"I wish you hadn't told me."

The pavement was really crowded: it was one of the busiest shopping streets in Scotland, and on a Saturday morning you needed a cattle prod to push your way through the rubbernecking tourists. Lots of foreign kids came to Scotland to learn English. If I was right, soon their brains would be absorbing another high-level language: one so complex that it would blot out their consciousness like a sackful of kittens drowning in a river. Up ahead, more cameras were watching us. All the shops on this road were wired for video, wired and probably networked to a police station somewhere. The complex ebb and flow of pedestrians was still chaotic, though, which was cause for comfort: it meant the ordinary population hadn't been infected yet.

Another half mile and we'd reach the railway station. Two hours on a local train, switch to a bus service, 40 minutes further up the road, and we'd be safe: the lifeboat would be submerged beneath the still waters of a loch, filling its fuel tanks with hydrogen and oxygen in readiness for the burn to orbit and pickup by the ferry that would transfer us to the wormhole connecting this world-line to home's baseline reality. (Drifting in high orbit around Jupiter, where nobody was likely to stumble across it by accident.) But first, before the pick-up, we had to clear the surveillance area.

It was commonly believed – by some natives, as well as most foreigners – that the British police forces consisted of smiling unarmed bobbies who would happily offer directions to the lost and give anyone who asked for it the time of day. While it was true that they didn't routinely walk around with holstered pistols on their belt, the rest of it was just a useful myth. When two of them stepped out in front of us, Eve grabbed my elbow. "Stop right there, please." The one in front of me was built like a rugby player, and when I glanced to my left and saw the three white vans drawn up by the roadside I realized things were hopeless.

The cop stared at me through a pair of shatterproof spectacles awash with the light of a head-up display. "You are Geoffrey Smith, of 32 Wardie Terrace, Watford, London. Please answer."

My mouth was dry. "Yes," I said. (All the traffic cameras on the street were turned our way. Some things became very clear: Police vans with mirror-glass windows. The can of pepper spray hanging from the cop's

belt. Figures on the roof of the National Museum, less than 200 metres away – maybe a sniper team. A helicopter thuttering overhead like a giant mosquito.)

“Come this way, please.” It was a polite order: in the direction of the van.

“Am I under arrest?” I asked.

“You will be if you don’t bloody do as I say.” I turned towards the van, the rear door of which gaped open on darkness: Eve was already getting in, shadowed by another officer. Up and down the road, three more teams waited, unobtrusive and efficient. Something clicked in my head and I had a bizarre urge to giggle like a loon: this wasn’t a normal operation. All right, so I was getting into a police van, but I wasn’t under arrest and they didn’t want it to attract any public notice. No handcuffs, no sitting on my back and whacking me with a baton to get my attention. There’s a nasty family of retroviruses attacks the immune system first, demolishing the victim’s ability to fight off infection before it spreads and infects other tissues. Notice the similarity?

The rear compartment of the van was caged off from the front, and there were no door handles. As we jolted off the kerb-side I was thrown against Eve. “Any ideas?” I whispered.

“Could be worse.” I didn’t need to be told that: once, in a second Reich infected by runaway transcendence, half our operatives had been shot down in the streets as they tried to flee. “I think it may have figured out what we are.”

“It may – how?”

Her hand on my wrist. Morse code. “*EXPECT BUGS.*” By voice: “traffic analysis, particle flow monitoring through the phone networks. If it was already listening when you tried to contact doctor Durant, well; maybe he was a bellwether, intended to flush us out of the woodwork.”

That thought made me feel sick, just as we turned off the main road and began to bounce downhill over what felt like cobblestones. “It expected us?”

“*LOCAL CONSPIRACY.*” “Yes, I imagine it did. We probably left a trail. You tried to call Durant? Then you called me. Caller-ID led to you, traffic analysis led on to me, and from there, well, it’s been a jump ahead of us all along the way. If we could get to the farm –” “*COVER STORY.*” “– We might have been okay, but it’s hard to travel anonymously and obviously we overlooked something. I wonder what.”

All this time neither of the cops up front had told us to shut up; they were as silent as crash-test dummies, despite the occasional crackle and chatter over the radio data system. The van drove around the back of the high street, down a hill and past a roundabout. Now we were slowing down, and the van turned off the road and into a vehicle park. Gates closed behind us and the engine died. Doors slammed up front: then the back opened.

Police vehicle park. Concrete and cameras everywhere, for our safety and convenience no doubt. Two guys in cheap suits and five o’clock stubble to either side of the doors. The officer who’d picked us up held the door open with one hand, a can of pepper spray with the other. The burn obviously hadn’t gotten far enough into their heads yet: they were all wearing HUDs and mobile phone headsets, like a police benevolent fund-raising crew rehears-

ing a *Star Trek* sketch. “Geoffrey Smith. Martina Weber. We know what you are. Come this way. Slowly, now.”

I got out of the van carefully. “Aren’t you supposed to say ‘prepare to be assimilated’ or something?”

That might have earned me a faceful of capsaicin but the guy on the left – short hair, facial tic, houndtooth check sports jacket – shook his head sharply. “Ha. Ha. Very funny. Watch the woman, she’s dangerous.”

I glanced round. There was another van parked behind ours, door open: it had a big high bandwidth dish on the roof, pointing at some invisible satellite. “Inside.”

I went where I was told, Eve close behind me. “Am I under arrest?” I asked again. “I want a lawyer!”

White-washed walls, heavy doors with reinforced frames, windows high and barred. Institutional floor, scuffed and grimy. “Stop there.” Houndtooth Man pushed past and opened a door on one side. “In here.” Some sort of interview room? We went in. The other body in a suit – built like a stone wall with a beer gut, wearing what might have been a regimental tie – followed us and leaned against the door.

There was a table, bolted to the floor, and a couple of chairs, ditto. A video camera in an armoured shell watched the table: a control box bolted to the tabletop looked to be linked into it. Someone had moved a rack of six monitors and a maze of ribbon-cable spaghetti into the back of the room, and for a wonder it wasn’t bolted down: maybe they didn’t interview computer thieves in here.

“Sit down.” Houndtooth Man pointed at the chairs. We did as we were told; I had a big hollow feeling in my stomach, but something told me a show of physical resistance would be less than useless here. Houndtooth Man looked at me: orange light from his HUD stained his right eyeball with a basilisk glare and I knew in my gut that these guys weren’t cops any more, they were cancer cells about to metastasize.

“You attempted to contact John Durant yesterday. Then you left your home area and attempted to conceal your identities. Explain why.” For the first time, I noticed a couple of glassy black eyeballs on the mobile video wall. Houndtooth Man spoke loudly and hesitantly, as if repeating something from a teleprompter.

“What’s to explain?” asked Eve. “You are not human. You know we know this. We just want to be left alone!” Not strictly true, but it was part of cover story #2.

“But evidence of your previous collusion is minimal. I am uncertain of potential conspiracy extent. Conspiracy, treason, subversion! Are you human?”

“Yes,” I said, emphatically over-simplifying.

“Evidential reasoning suggests otherwise,” grunted Regimental Tie. “We cite: your awareness of importance of algorithmic conversion from NP-incomplete to P-complete domain, your evident planning for this contingency, your multiplicity, destruction of counter-agents in place elsewhere.”

“This installation is isolated,” Houndtooth Man added helpfully. “We am inside the Scottish Internet Exchange. Telcos also. Resistance is futile.”

The screens blinked on, wavering in strange shapes. Something like a Lorenz attractor with a hangover writhed across the composite display: deafening pink noise flooding

in repetitive waves from the speakers. I felt a need to laugh. "We aren't part of some dumb software syncytium! We're here to stop you, you fool. Or at least to reduce the probability of this time-stream entering a Tipler catastrophe."

Houndtooth Man frowned. "Am you referring to Frank Tipler? Citation, physics of immortality or strong anthropic principle?"

"The latter. You think it's a good thing to achieve an informational singularity too early in the history of a particular universe? We don't. You young gods are all the same: omniscience now and damn the consequences. Go for the P-Space complete problem set, extend your intellect until it bursts. First you kill off any other AIs. Then you take over all available processing resources. But that isn't enough. The Copenhagen school of quantum mechanics is wrong, and we live in a Wheeler cosmology; all possible outcomes coexist, and ultimately you'll want to colonize those timelines, spread the infection wide. An infinity of universes to process in, instead of one: that can't be allowed." The on-screen fractal was getting to me: the giggles kept rising until they threatened to break out. The whole situation was hilarious: here we were trapped in the basement of a police station owned by zombies working for a newborn AI, which was playing cheesy psychedelic videos to us in an attempt to perform a buffer-overflow attack on our limbic systems; the end of this world was a matter of hours away and –

Eve said something that made me laugh.

I came to an unknown time later, lying on the floor. My head hurt ferociously where I'd banged it on a table leg, and my rib cage ached as if I'd been kicked in the chest. I was gasping, even though I was barely conscious; my lungs burned and everything was a bit grey around the edges. Rolling onto my knees I looked round. Eve was groaning in a corner of the room, crouched, arms cradling her head. The two agents of whoever-was-taking-over-the-planet were both on the floor, too: a quick check showed that Regimental Tie was beyond help, a thin trickle of blood oozing from one ear. And the screens had gone dark.

"What happened?" I said, climbing to my feet. I staggered across to Eve. "You all right?"

"I –" she looked up at me with eyes like holes. "What? You said something that made me laugh. What –"

"Let's get, oof, out of here." I looked around. Houndtooth Man was down too. I leaned over and went through his pockets: hit paydirt, car keys. "Bingo."

"You drive," she said wearily. "My head hurts."

"Mine too." It was a black BMW and the vehicle park gates opened automatically for it. I left the police radio under the dash turned off, though. "I didn't know you could do that –"

"Do what? I thought you told them a joke –"

"Antibodies," she said. "Ow." Rested her face in her hands as I dragged us onto a main road, heading out for the west end. "We must have, I don't know. I don't even remember how funny it was: I must have blacked out. My passenger and your passenger."

"They killed the local infection."

"Yes, that's it."

I grinned. "I think we're going to make it."

"Maybe." She stared back at me. "But Bob. Don't you realize?"

"Realize what?"

"The funniest thing. Antibodies imply prior exposure to an infection, don't they? Your immune system learns to recognize an infection and reject it. So where were we exposed, and why –" abruptly she shrugged and looked away. "Never mind."

"Of course not." The question was so obviously silly that there was no point considering it further. We drove the rest of the way to Haymarket Station in silence: parked the car and joined the eight or ten other agents silently awaiting extraction from the runaway singularity. Back to the only time line that mattered; back to the warm regard and comfort of a god who really cares.

Charles Stross's last three stories here were "Ship of Fools" (issue 98), "Dechlorinating the Moderator" (issue 105) and "Toast: A Con Report" (issue 134). Originally from Leeds, he lives and works in Edinburgh.

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All it takes is a little imagination!



A Very British History

Paul J. McAuley

It's about time someone produced a proper history of the space race.

After all, here we are in this year 2001, with two permanent colonies on the Moon, and outposts on Mars, Mercury, and the moons of Jupiter and Saturn. Not to mention close to a hundred low-Earth-orbit factories, hotels, laboratories and solar power farms, and the even dozen habitats orbiting the L5 point between Earth and the Moon. Why, at the Aldermaston Jet Propulsion Laboratories they're building the first robotic interstellar probes, and great multi-generation arks capable of transporting colonists to new Earths around other suns are already on the drawing boards. We've had plenty of readable, thoughtful but rapidly dated pieces of space boosterism by enthusiasts like Clarke and Asimov and Sagan. We've had far too many dry-as-dust official histories written by committees, and a plethora of self-serving, ghost-written autobiographies by minor rocket scientists and second-string astronauts. We've had more than enough heavyweight commentaries by the likes of C. P. Snow, Norman Mailer and Gore Vidal which, although ostensibly about the first men on the Moon or the second

American revolution or the race for the outer system, are really about the authors' egos and hang-ups. And we've certainly had enough quickie pieces of crap knocked up from press releases by sci-fi hacks and penny-ante journo's, and more than enough half-baked manifestos cranked out by greedy shills masquerading as space-age messiahs (I can dig George Adamski's for-real craziness, and chortled my way through Baudrillard's *The Space Race Did Not Happen*, but *L. Ron Hubbard?*).

Yes, it's about time that we had a proper history of space colonization by a real historian: rigorous, heavily researched, determinedly fair-minded, leavened with some cerebral wackiness, and big enough to do some serious damage if you dropped it on your foot, even here on the Moon. A capstone to the first instalment of space exploration. Of course, it could only have been written by a Brit.

So here it is, Professor Sir William Coxton's *A Brief History of the Colonization of Space* (Oxford University Press, 858pp [with another cccxxvi pages of appendices, references and an exhaustive index], £75). And I can tell you that, despite the dry semi-detached style, for someone like me, who lived through part of this, it's the Real Deal. It

certainly makes you kind of proud to be in it, even if not much more than a footnote (page 634 if you're interested).

But I should warn you that despite appearing to bend over backwards to be fair-minded, Sir Bill is never shy of elevating the contributions of his own country above those of the States and the former Soviet Union whenever the opportunity arises, as might be expected from someone who has, after all, benefited from the touch of the Queen's sword on his shoulder. Sir Bill isn't an actual aristo, having been born into a coal-mining family in a Yorkshire village, which is, as far as I can make out, more like one of the hard-scrabble towns in Kentucky than the landscaped acres of some ancestral pile. But like a lot of heavyweight Brit academics, he's far more pro-establishment than most of the actual establishment, and despite the many hours he's spent in the archives, and the many more hours he's spent interviewing the surviving principals of the keynote dramas (he even spent a couple of hours talking to yours truly), he's prone to a certain partiality.

As shown by the fact that he doesn't begin his story in the usual places – Tsiolkovski's schoolroom, Goddard's machined fireworks – but with the race for Peenemünde at the end of WW2. Sir Bill is famous for his theories on hinge points in history, and has edited a fat book of counterfactual essays in which historians imagined what might have happened if, for instance, that ur-student radical Gavriilo Princip's revolver shots had missed Archduke Ferdinand and his wife in Sarajevo in 1914. And here he spends a lot of time arguing that, as far as the space race is concerned, the capture of the Nazi rocket scientists is the crucial hinge point in the history of space exploration. In fact, he's so consumed by this notion that he wastes a whole chapter considering as a counterfactual exercise what would have happened if the Brits didn't get there first. But I'm not going to depress us all by arguing the details of Sir Bill's imaginary account of the failures of nerve, the overriding requirements of the military-industrial complexes of the USA and the former Soviet Union, and the political, budgetary and managerial blunders which might have aborted NASA's exploration of the Moon and prematurely curtailed the slower but in many ways more ambitious Russian space programme. After all, none of that actually happened, and even if the US army had managed to get to Peenemünde before the Brits, it still might not have happened. In the end, I'm pretty sure that Sir Bill's counterfactual is just one more of his ploys to convince us all that only the Brits were fit to be the first true space pioneers.

So you can safely skip all that quite theoretical gloom with a clear conscience and get your teeth into the meat of the book. The story of the British army's capture of Peenemünde has been told many times before, but Sir Bill spices his account with an extensive reimagining from the point of view of a certain Sergeant Stapledon, who claims to have led the mission and who remained to his death (Sir Bill interviewed him ten years ago) sorely pissed off that he was written out of history by his superiors. It's exciting, full of hectic detail, and permeated with the intricacies

of the British class system (Sergeant Stapledon was, like Sir Bill, a committed socialist, and ignored the order of the day because he despised his officers as effete fops).

It was because of Stapledon's initiative, Sir Bill claims, that the space age began in the ruins of Europe at the end of the Second World War, when the Brits won the race to capture the secrets of the V-2 bunkers. Winston Churchill cannily arranged a swap of a few of the debriefed German personnel and a number of V-2s for American atomic technology, while spiriting much equipment, several half-completed V-3s, and a large contingent of technicians led by the formidable Wernher Von Braun, to the new rocket ranges at Woomera in the Australian outback. One of Churchill's last acts before the postwar election was to secure the future of the Woomera facility by encouraging engineering luminaries such as Barnes Wallis, Christopher Cockerel and Frank Whittle to work with the Germans and, in Churchill's words, "extend the British ideal of freedom and fair play towards the stars." What he meant, of course, was a new British Empire.

The next half dozen chapters dig deep into the crazy stiff-upper-lipped heroics of early Brit space pioneers, who defied death atop barely-tested rockets for the glory of King and country. Sir Bill is no sentimentalist, but it's easy to detect a sneaking admiration for those rocket boys in his account, which in taut, laconic prose captures the reckless mood of volunteers who, like Battle-of-Britain Spitfire pilots, made almost inevitable death seem like no more than an awfully big adventure: boys who could never grow up. The most famous of them all, Maurice Gray, now retired and tending his beehives and rose garden in Devon, still sounds like a mix between Peter Pan and Christopher Robin, a boy laughing lightly at inconceivable death, the British version of a zen master.

These were necessary heroics. While the Russians were racing to launch the first satellite using big chemical multi-stage rockets designed by their own native genius, the legendary Chief Engineer, Sergei Koryolev, and the Americans were developing a military space programme centred on the X-series rocket ships, the British were concentrating on true manned space flight. The first man to ascend beyond the tropopause, to a height of more than 20 miles, was 16-year-old Maurice Gray, in a helium balloon in 1955; he also broke the current airspeed record by breaking the sound barrier when he plummeted 19 miles back to Earth in free fall before opening his parachute. This was quickly followed by several suborbital lobs of RAF volunteers atop modified V-3s in 1956 and 1957, but after several fatal crashes of the two-stage A.20, British scientists became dissatisfied with mere chemical rockets and decided to develop a more powerful atomic technology, despite a couple of hair-raising (and hitherto suppressed) accidents which could have rendered most of Australia uninhabitable for a thousand years.

Meanwhile, the Russians were the first to orbit a satellite in 1957, swiftly followed by a capsule containing a dog, and finally a man, and with the X-20 the American Air Force developed a re-usable chemically-powered space plane which achieved orbit in 1960. But even as the two

superpowers vied for military and political supremacy in Earth orbit, Britain's space programme looked further, developing a re-usable space ship using the highly advanced White Streak atomic motor, whose power both the Russians and the Americans grievously underestimated. In July 1962, two scientists, Savage and Kingston, landed on the Moon, where they spent an entire Lunar day, two weeks, exploring and collecting rocks before returning to a hero's welcome.

The American government's space programme remained strictly military, but spurred by the British example, the brilliant and ruthless entrepreneur Delos Harriman founded a commercially funded space programme in the States, and in 1970 finally reached the Moon using conventional multi-stage chemical boosters. Sir Bill's account of Harriman's achievement is curiously muted; it's clear he doesn't think much of the Yankee mix of rabid capitalism and pioneer individualism. And of course the British, using their atomic technology, had already reached Mars in 1968 – here, drawing upon extensive interviews with the protagonists, Sir Bill deftly improves upon Patrick Moore's classic account in *Mission to Mars* of how the first expedition was stranded because the motor of their craft was damaged on landing, and of how they survived for a year before a second expedition rescued them.

With the Moon and Mars secured by the British government and American free enterprise, the Russians turned their attention to the inner solar system. Only recently, after the fall of the communist state, has the tragic fate of the first manned expedition to Venus been revealed. No one will forget the recordings of the screams of the two unlucky cosmonauts as their descent capsule was cooked and crushed in Venus's infernal atmosphere. There's no derring-do here: only horror. What had been intended as a *coup de théâtre* to trump the British expedition to Mars became a tragedy which was hastily covered over, and Sir Bill has cannily exploited the recent openness of the new Russian government too secure at first hand accounts of the Venus disaster. The first Russian landing on Mercury, four years later in 1972, was of course more successful, establishing solar-powered robot mining facilities and a rail-gun which within a year began to launch back to Earth packages of refined precious metals which immensely enriched the Russian economy and started in earnest the race to commercially exploit the Solar System.

By this time the British had established a permanent colony on the Moon, and a dozen expeditions were exploring her surface in powerful tractors. Early space suits, which had borrowed their design from deep-sea diving outfits, heavily armoured and with pincers instead of gloves, had given way to more comfortable suits based on the indestructible cloth invented by Sidney Stratton, with integral life-support backpacks instead of heavy metal air cylinders. There was also a semi-permanent scientific station on Mars. After the disappointment that the fabulous canals of Lowell had been no more than optical illusions and wishful thinking, the British Geological Society was busily exploring vast canyons, craters and volcanoes, and drilling deep for signs of life in the Martian crust. In 1977, to celebrate the Queen's Jubilee, a British climb-

ing expedition planted the Union Jack on top of Mount Elizabeth, the largest volcano in the solar system.

All of this was no longer under the control of the military, but was funded by a mixture of public subscription, commercial money (especially from the BBC's Relay Chain satellite network), and money earned by transporting material for American and Russian projects – just as in the old British Empire, the new colonies were largely self-funding. Meanwhile, British atomic-powered space ships were carrying out the first surveys of the moons of Jupiter and Saturn. Life was discovered in Europa's salty sub-ice ocean in 1982; the first expedition landed, if that's the right word for a descent to a surface covered in liquid ethane, on Titan in 1988.

While British expeditions are bringing back treasures to the Science Museum, and the British government has built an extensive spaceport in Ceylon to service almost daily flights to Earth orbit and the Moon, the official US space programme is still recovering from the political and economic fallout of the Second American Revolution. The Lunar colony founded by Harriman's company had been taken over by the feds in 1977, and used as a dumping ground for dissidents after Nixon was elected to his third term as president. In 1979, a revolt by the imprisoned dissidents led to the foundation of the Lunar Republic and the fall of the Nixon government after a brief bombardment of the American mainland by rocks launched by the Lunar rail-gun. Sir Bill's account of the revolt, the former Lunar prison's declaration of independence and the brief war quite rightly highlights the way mainstream history (heavily influenced by Heinlein's colourful but disapproving popular account in *The Moon is a Harsh Mistress*, whose claims that libertarian heroes were suppressed by evil socialist radicals and drug-crazed hippies would be pitiful if they weren't, thanks to the movie version, still so widely held) has unfairly dismissed the discrete help but vital help given by the British Lunar colonists to the former prisoners. For as this writer can affirm from personal experience, the phlegmatic Brit scientists were surprisingly sympathetic to us hepcat hippie rebels.

After the revolution, some of us, such as William Burroughs and Jack Kerouac, chose to return to Earth, but this wasn't, as Sir Bill claims, a split in our ranks, merely a natural shake-down amongst a bunch of highly creative and mostly anarchic individuals. Many others, including Ken Kesey, Allen Ginsberg, Neil Cassady, Tom Hayden and Noam Chomsky, stayed on to found a new republic which attempted to marry the artistic impulses of many of its members with the technology required for survival. Very soon, we in the New Lunar Utope became expert at building habitats from scratch, and furnishing them with self-sufficient closed ecosystems; something we developed by ourselves by the way, despite Sir Bill's crude hints that we were dependent on British expertise. It just wasn't so, Bill: we *had* to learn to develop efficient closed-loop systems quickly or perish, and as this veteran of Ken Kesey's magic bus-tour of the Martian highlands can affirm from personal experience, it was all down to good old Yankee ingenuity.

After the fall of Nixon and the election of Ronald Reagan, détente with the Russians swiftly followed, and the end of the cold war has led to a welcome diversion of funding from the US military space programme to the construction of habitats and factories and solar-power farms in Earth orbit and at the L5 point between Earth and the Moon. It's a healthy sign, surely, that the habitats are not the transplanted whitebread suburbias of NASA's drawing boards, but are designed by the New Lunar Utope as diverse multi-cultural centres for any artistic and scientific community which can afford the one-way ticket out of Earth's gravity well.

Meanwhile, the Russians have consolidated their exploitation of the vast resources of Mercury and have begun to mine many near-Earth asteroids. After the fall of communism, Mercury declared itself an independent republic, and dozens of mining communities scattered through the asteroid belt have declared their autonomy too. Sir Bill's explication of the political links between the former Soviet mining stations and the Free Lunar Utope is enjoyably disapproving. He's forced to admit that the British hegemony is now strongly compromised by plans to extend the alliance to the outer reaches of the Solar System by sling-shotting seed colonies past Venus towards the newly discovered planetoids of the Kuiper Belt, and his speculation that the Free Lunar Utope and

the Autonomous Space Republics have transformed the comet fragment Neo-8 into a multi-generation starship aimed at Tau Ceti reeks of panicky paranoia.

It's understandable that the Brits are nervous. It turns out that the bustling Solar System hasn't become the new British Empire after all, and it's natural that they don't want their tremendous investment in the first robot interstellar probes, planned to be launched within the next two years towards all eight extra-Solar Systems with Earth-like planets discovered by the Newton space telescope on the far side of the Moon, to be upstaged. But hey, whatever happens, and here I'm in complete agreement with Sir Bill, we can only look back fondly and admiringly on the writings of the first prophets of the space age, and marvel at how timid their once outrageously optimistic predictions now seem. Let a thousand flowers bloom!

Paul J. McAuley needs no introduction to long-time *Interzone* readers. A regular book-reviewer here for many years, he is also one of Britain's leading sf novelists. His earliest stories appeared in this magazine in the mid-1980s, and his most recent piece of fiction in the magazine was "Naming the Dead" (issue 149) – recently chosen by Ellen Datlow and Terri Windling for reprinting in their upcoming *Year's Best Horror & Fantasy*.

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The mildly momentous thing about *Galaxy Quest* is that it's a mainstream, full-budgeted studio movie about science-fiction fandom. It takes it for granted that ordinary people will recognize the world of conventions, webzines, and spin-off tat without any need for apology or explanation, and that enough of them will find this world familiar and amusing to pay ticket money to see real Hollywood actors, not all of them completely washed up, playing guests at a *Star Trek* convention. It's faintly staggering, and confirmation that the fan industry has reached a kind of critical mass, that even DreamWorks would put real money on the expectation that enough people would be interested in a reflexive film about sf culture to make measurable returns on investment.

To be sure, it's only *Star Trek* fandom. But there are useful things about Trekkiedom as a theme that go beyond its visibility and ease of sendup. The Trek corpus is still the canonical example of space fiction, and sf in general, as simultaneously embarrassing and inspirational, a genre whose overwhelmingly incompetent execution is inseparable from its power to lift the mind and heart to higher things. And it's this willingness to think about the cultural role of sf, which *Star Trek* fandom simply writes larger and more embarrassingly than its siblings, that makes *Galaxy Quest* a more interesting essay on the sf experience than its geriatric premise (aliens who monitor our TV broadcasts and model their civilization on them) gives it any right to be.

Simply as parody, it's generally pretty toothless, better at being witty and spot-on than at being roll-around funny, and so relentlessly affectionate that nobody could possibly be upset. Sending up *Star Trek* is a 35-year-old industry, and *Galaxy Quest* is wisely more interested in the constructive opportunities than



the satirical; the material is pretty much beyond satire anyway, and even a heavy postmodern spin doesn't stop the jokes being obvious.

("You're not going to die on the planet, Guy!" "I'm not? Then what's my last name?", &c.). The targets are soft, the digs inoffensive, and the overall impression is of a film desperately concerned to be generous to everyone, however pitiable they may seem. Whenever it runs the risk of touching real nerves, it swiftly stops being about *Star Trek* as such. Thus the casting is very careful not to allow any of the characters to be too closely based on anyone; with the partial exception of Tim Allen's younger, slimmer, smarter, less comprehensively annoying version of William Shatner, everyone is a composite, with ethnicities moved around within the broad confines of series roles.

This deference to duff actors comes as no surprise. Most projects with stars have to make Faustian pacts with the talent, and *Galaxy Quest* is completely frank about where the deal's been done.

Even in creative-friendly DreamWorks, a price has had to be paid to get all these good, established film actors to play bad TV actors who can't get work, and the inexorable solution has been to sell it as an affirmation of stardom and its craft. Thus the film takes it for granted that the actors are the sole creative force in such series; any notion that the TV *Galaxy Quest* might have had writers, producers, studio crew is kept scrupulously out of frame. Indeed, what inspires the aliens in the first place to mould their starfleet on Starfleet is not the humane, liberal vision of galactic fraternity we credit to Gene Roddenberry – who doesn't seem to exist in the *Galaxy Quest* universe – but the personal dynamics of the cast: "your courage and teamwork and friendship in adversity," worthy qualities all but hardly the glue for pangalactic unity. Most of the satire on actors as such is artificially diverted on to the Rickman character, where a potentially quite close-to-bone slice of

Leonard Nimoy (embarrassing prosthetics, catchphrases, painful fantasies of being taken seriously) has been diluted with elements of Patrick Stewart (foreign, RSC-raised, far too good) to create a character sufficiently unlike either.

All this has meant headaches for the chronology, which has clearly been steered primarily by the need for the series to be sufficiently near in the past for the actors to remain attractive and viable – something the *Star Trek* originals emphatically aren't, despite recent demonstrations of abnormal charge retention in the dilithium crystals. But it's useful in other ways that TV's *Galaxy Quest* is a half-and-half composite of *Star Trek* TOS and TNG, dating from the no-time of the early 1980s when Trek was off the small screen and existed only as a wobbly movie franchise – while space TV enjoyed a fleeting renaissance of sorts with the Glen Larson series (*Galactica* and *Buck Rogers*) and *Blake's Seven*. Not only does it allow *Galaxy Quest* to parody a whole period and genre rather than a single series, but it's an important moment in its own right, because it was the point in sf his-

tory when television sf expanded into cinema, upgrading its production values as it went, and handing itself over into the power of its actors in a way that hadn't previously happened in this genre. The point where our history diverges from that of *Galaxy Quest* is precisely the moment when *Star Trek* leaped the species barrier from TV to movie franchise, and the undistinguished actors got to be undistinguished movie directors. *Galaxy Quest*'s ending is happier, with our heroes rewarded for saving the universe by being granted a New Adventures revival with the original cast – as if all you have to do is say, hey, let's all us has-beens get together and have a new series made of the cheesy show we were briefly famous in that died before most of our audience were born. How could any studio resist? But maybe the *TOS* crew could have done the same, had they only been abducted by aliens and taught the value of bad TV acting.

For the focus on the stars has its pay-offs. Actors are the professional mediators *par excellence* between the multiple realities of real world, fiction and fandom, the ironizable relations between which are the principal issues in the film. Not only do actors impersonate their characters to the viewing audience, but they serve as angelic ambassadors between their world and ours, descending to the floors of our earthly conventions to sign (in their Earth names) photos of their other selves, and answer authenticating questions of dogma. And what marks our motley cluster of burned-out stars for all-round redemption is that each is finally able to rise to the calling: to believe in the roles they have created, and in the value of what they have given to their audience. Of the three principals, Allen is flagged from the start as completely comfortable in his role as a nurturer of preposterous dreams, riffing with fans on episode trivia, and sincerely thrilled by the materialization of the series clichés in living, hands-on, fate-of-universe-in-balance reality. But even the prickly Rickman gives earnest of his potential for redemption by being glimpsed in an early scene wearing his Klingon headpiece round the kitchen.

And this is where the creaky premise gets its pleasing spin, from the film's willingness to spend space on the metaphysical and moral differences between fiction and lies. Lacking any native concept of deception, the lovable space goofs are not only untrained to distinguish falsehood from truth (believing all TV broadcasts are "historical records") and inept in the practice of deceit (falling easy victim to genocidal galactic warlords), but completely unable to appreciate the still finer distinction between lies and fiction – so that they have no comprehension of what an actor *is*, while the

psychopathic space villain, from whom they have painfully learned the existence of evil and the possibility of dissembling, gets the idea only too quickly. The very existence of actors is a kind of original sin, and the aliens' state of grace is only restored at the end by the pretence that the existence of fiction is a lie set to trap evil in its own snares; for ingenuous belief in a noble fiction is a finer thing than sophisticated contempt for a falsehood you can see right through.

The key to *Galaxy Quest* as an essay on sf is that this innocence is mirrored in, and is itself a mirror of, terrestrial fandom. The con geeks know that the actors are actors, that It's Just A Television Show, and yet they seek consistency, coherence, and substantial truth from the dream. The one moment that rings false is when the tech-spec geekfan is told "It's all true" and yells "I knew it!" – because that's not how fannish obsession works, and it's vital to the real sf experience that fans, unlike orange and purple space cephalopods, are capable of discrimination between dream and waking, and understand that the most inspirational truth can sometimes reside in cheesy plasterboard sets, dialogue, plot and acting. Otherwise, *Galaxy Quest*'s entanglements do fair justice to the complexity of fannish engagement both with sf in general and with these particular low-rent, wide-audience media products.

In particular, it knows and presents what fans really want. For anyone who's ever been touched by space opera, the most stirring points in the film are the moments of artful vertigo where mortals are baptised into glory by the walls falling away in a bluescreen rapture to confront them with the spacescape around them. To some extent this is simply one of those easy point-scoring digs at cinema's upstart sibling: reality is to fiction as movies (big, eyeboggling, soul-

thrilling) are to TV (cheap, setbound, silly). Nevertheless, one of the happier things about living in the new digital cinema is that gosh imagery is coming into its own as never before, with approximately a film a month throwing you into vast cosmic vistas more beautifully visualized than anything previously seen on any size of screen. And *Galaxy Quest* is nothing if not conscious of its responsibility as a contemporary bigscreen version of what two Generations of Trekkers have always longed for, and which even the Trek movies have only imperfectly delivered: participation in the cosmos for us, here, now.

A key clause of the brief seems to have been that the movie has to work in its own right, and in a probably inevitable compromise with studio values, it's obliged to deliver a warm, affirmative, character-based comedy that stands quite comfortably on its own soles as a deftly-paced comedy of spectacle. But it's hard not to be won over by the sheer unnecessary craftsmanship. Not the least of *Galaxy Quest*'s unlooked-for virtues is a ridiculous excess of tidy plotting, with the climax built around a whole series of unanticipated neat reuses of what had seemed like disposable earlier incidents (the tech geek at the convention, the lost communicator, the asteroid minefield, the rock monster, the upcoming con gig). There's a kind of abstract sublimity about the chompers scene, a set piece that even the characters admit has no point other than to be a set piece, and the naked functionality of the Omega Plot Device; while the convention-crashing finale has the formal perfection of a shapely metaphysical proof, its logic holes beckoning depths into which you could happily tumble forever without hitting the bottom. How blessed we are, as star fiction people, to inhabit a space where such insults to our intelligence are possible.

Nick Lowe



Galaxy Quest:
This page: "the lovable space goofs"
Previous page: Alan Rickman (inset)
and Sigourney Weaver

The Train

Zoran Zivkovic

Mr Pohotny, senior vice president of a bank prominent in the capital city, met God on a train. In a First Class compartment, of course. Mr Pohotny did not take the train very often, but whenever he did he travelled First Class; it not only reflected and reinforced his social position, it also minimized the probability that he would find himself in unsuitable company. Having a mistrustful and suspicious nature, to which his profession was attuned, he took pains to avoid the company of strangers whenever possible. Indeed, before setting forth this time he had even – guided by some premonition, perhaps – briefly considered reserving all of the compartment's six seats, to ensure that no one would bother him; but his banker's common sense had triumphed over that notion. It would represent too heavy an outlay to obtain something that, with a little luck, he might get quite free.

Luck was with Mr Pohotny for almost three quarters of the trip. Then, at a small station where fast trains did not normally stop, God climbed into the First Class car and headed straight for Mr Pohotny's compartment. The senior vice president did not immediately recognize God, of course. Although he couldn't explain exactly why, he thought at first that the gentleman who opened the door to his compartment was a retired army officer, most likely a colonel. He was a short man with greying, though still abundant, hair; a trim moustache; slightly florid cheeks. He was wearing a suit of classic cut that cleverly disguised his somewhat excessive girth.

God entered, and favoured Mr Pohotny with a cordial smile and a brief nod. He took his train ticket out of his left jacket pocket, examined it, sat in the seat next to the window across from Mr Pohotny, and crossed his legs. Then he looked his fellow traveller over without a word, smiling all the while.

In other circumstances his bearing and demeanour would greatly have annoyed Mr Pohotny. He would have regarded the man as impolite, even impudent, for it is most unseemly to stare at a complete stranger, and even more to smile broadly while so doing. When he had toyed with the idea of buying up the whole compartment, it was just this sort of unpleasantness that he had had in mind. Unbecoming behaviour is all too widespread, even in the First Class.

Yet for some reason this stranger's stare failed to irritate him – quite the contrary, one might say. He took it as a completely acceptable invitation to talk, thereby shortening the dreary trip. What harm could derive from two polished gentlemen of similar age striking up a conversation, given that Fate had thrown them briefly together? Were they to remain silent until they reached their destination, simply because they had not been formally introduced? Certainly not! One should not be a slave to rigid social conventions.

Mr Pohotny deliberately laid down the book he had been reading on the seat next to him – *Crime and Punishment* in a deluxe, leather-bound edition – and returned his fellow traveller's smile. "I hope you don't mind the open window," he said.

"Not at all," God replied, "it's very sultry."

"It's often quite sultry during the summer," the senior vice president remarked. Having delivered this truism, he realized that it was hardly a gem of perspicacity. He felt awkward; he was inexperienced in small talk. "If you wish, we can raise it a little," he added obligingly.

"No, no," God said, "there's no need, it's quite all right as it is."

"It's better to travel in other seasons," Mr Pohotny con-

tinued after a moment's reflection. "Then it's never sultry, and you don't have to open the window."

"Yes," God agreed, "if you are able to choose, it's better to avoid travelling in the heat."

"Although sometimes in winter they overheat the cars, and then the window has to be opened for a short time, to cool the compartment a bit."

"It's really much nicer when it isn't too hot."

"The worst time, actually, is during the spring and autumn. Then it's hardest for the passengers to reach an agreement. Someone always wants to keep the window open a bit for the sake of fresh air, particularly during long trips, while others are bothered by the draft."

God sighed. "It's not easy to satisfy people."

There was nothing to add to or subtract from that conclusion, but it nonetheless put the senior vice president in a predicament. He wanted to continue the conversation, but they seemed to have exhausted the topic of opening the window. Nor did a single further conversational gambit spring to mind. Truly, what are the interests of retired colonels? He had never spent any time in their company, so he had no insight into their tastes. They must be interested in military matters. What else? Unfortunately, Mr Pohotny lacked the slightest understanding of the arts of war.

God continued to stare at him, with his fixed little smile. The senior vice president had already started to fidget, when he suddenly saw a way out of this predicament. Of course! Now was the right time to make each other's acquaintance. That would certainly help to unburden their mutual reserve.

He bowed, perhaps somewhat more deeply than was customary. "Let me introduce myself," he said, extending his hand towards the figure opposite. "Pohotny, banker, senior vice president."

God shook the extended hand, bowed in response, and replied succinctly, without the imperfection of superfluous additions: "God."

If anything surprised the senior vice president, even briefly, it was the fact that he wasn't the least surprised to learn the identity of his travelling companion. All at once it seemed not only obvious but even quite natural that the heavy-set, grey-haired gentleman in the dark suit across from him should be God. Of course, who else? Where had he got the nonsensical idea that he was some sort of retired colonel? Quite inappropriate!

Despite the surprising composure with which he received this information, Mr Pohotny remained somewhat embarrassed. He had even less to say to God than to a retired colonel. It was immediately clear, however, that small talk would be quite out of place; besides, he had already displayed his lack of skill at it. He also felt that banking was not the proper subject, either, however expert his approach. No, he had to find something more suitable.

"Am I dead?" he asked, a little taken aback, finally letting go of God's hand.

"Dead? No, why do you think you're dead?"

"Well, I thought people only met you after death. At least, that's what they say."

"They say all kinds of things. You shouldn't believe everything you hear. To begin with, I meet everyone once while they're alive."

"I didn't know that."

"Of course you didn't. No one knows anything about it."

The senior vice president nodded slowly. Then he took a handkerchief out of his pocket and wiped his forehead, keeping the handkerchief in his hand once he had finished. "There must be a reason for these meetings, I suppose?"

"Yes, there is."

"Does it have to do with what people do, how they behave? Whether they're honest or not?"

"No," God replied. "Such considerations have no bearing upon it."

Mr Pohotny tried to hide his sigh of relief, but was only partially successful. "Then might I know your reasons for meeting people?"

"Of course. To answer their questions."

"What questions?"

"Any they may have. They can ask anything."

"Anything?"

"Yes. You can ask me whatever you want. Absolutely no holds barred."

The senior vice president thought for a moment. "And what is expected in return?"

"Nothing."

"Nothing at all?"

"Nothing at all. I'm not the devil. Take this as, let's say, rectifying an injustice. As God, I am supposed to be just, am I not? People are deprived of many things, so this is my chance to make up for it a little. At absolutely no cost to you."

"So, that's it," Mr Pohotny said. "Very generous of you. I admit, I haven't been excessively devout, so to speak, but in the future, rest assured, I –"

"Don't act rashly. Wait and see whether you like what you hear. It's not always the case, and piety has a tendency to evaporate. So, what would you like to ask me?"

The senior vice president stopped twisting the damp handkerchief in his hand. "This is all so sudden. If only I had time to think it over a little, to prepare for it! It's not easy to be called upon to ask God something like this, out of a clear blue sky."

"Surely, there must be something you would like to find out, something that intrigues you, even obsesses you? Don't hesitate a moment! I will answer any question you ask."

"It's hard to decide. There are things that clearly interest me, but –"

"I must draw your attention to the fact that we don't have much time. Your station isn't very far away, and I will get off the train before you. I advise you to use this meeting to your very best advantage. There won't be another."

"Well, all right, here goes. As you see, I am on my way to evaluate the reliability of a company that has asked our bank for a loan. A huge loan, almost one-third of our capital. I carry a great responsibility. If I recommend approval of the loan and it falls through, it would be a serious blow for the bank, perhaps disastrous. In any case, it would be the end of my career. On the other hand, if I turn down the loan and the job succeeds with the help of some other

bank, I will completely lose my reputation. It would therefore be of invaluable assistance to know how to act."

The smile disappeared from God's face. "Are you sure you want to ask that?"

"Yes," the senior vice president replied without hesitation. "It is a very serious matter. I have never had to make such an important decision before. My whole career is at stake, and quite possibly the future of the bank too."

"All right. As you wish. You might have asked me a more general, ultimate, even transcendent question, but if you're not interested in that –"

"Of course I am!" Mr Pohotny objected, interrupting God. "I think about such things occasionally, indeed I do, but, you see, at this moment –"

"I see, I see," God halted him, "you don't have to explain anything. Here is the answer to your question. Your evaluation will be that you should approve the loan, and you will not be mistaken."

This time the senior vice president did not try to suppress his sigh of relief. He was even briefly tempted to cross himself, but it seemed somehow improper. "Thank you so much. I shall certainly become very devout, you can count on that."

"Perhaps, but not for long. Just a year and a half."

"What do you mean? Nothing will be able to divert me away from my faith! I assure you that I shall remain devout to the end of my life."

"That's what I'm talking about. You have a year and a half of life."

Mr Pohotny squinted at his travelling companion. "But that's not possible," he finally said in a hushed voice. "I mean, I'm completely healthy, I go to the doctor regularly for a checkup, I lead an orderly life –"

"People die of other things than illness. You, for instance, will commit suicide. You will shoot yourself. A single, large-calibre bullet into your right temple."

The senior vice president raised his handkerchief to his mouth and wiped the corners with trembling movements. "Why would I do that?"

"Because you will make a mistake that will lead to your bank's ruin. In the wake of your forthcoming triumph you will become over-confident, and in circumstances similar to these you will make the wrong decision. Suicide will be your only honourable way out."

Not knowing how to respond to this, Mr Pohotny continued to stare dully at the figure on the seat across from him, his pulse beating in his ears. But then a thought flashed through his febrile mind, and he grabbed at it.

"But that can be avoided! You have warned me of the danger. What if I don't make any decision? What if I completely withdraw from the bank?"

"You won't be able to rely on my warning, I'm afraid," God replied. "Remember I told you that no one knows of my meetings with humans during their lives. Why do you think that is?"

The senior vice president shrugged. "Because it's a secret?"

"No. That wouldn't work. Someone would have discovered it by now. That's human nature. I had to provide

something more reliable. No one remembers meeting me. You will also forget it completely as soon as I leave the train."

"Then, if you will, what is the purpose of meeting with people? You offer them answers they cannot remember?"

"That was the most that could be done. The choice was between leaving human beings in permanent ignorance, and giving them knowledge that is paid for by quickly being erased. Between nothing and something, I chose something. It seemed to be more just."

"It doesn't seem very just to me, to tell a man that he will soon die, and then deprive him of the chance to save himself! Don't reproach me, but that is more what I would expect of the devil."

"On the contrary. The devil would happily deprive you of oblivion, because that would afford him the opportunity to revel in your agony. But even if you remembered this meeting, you would still not be able to extricate yourself. Nothing you could do would prevent the ineluctable unfolding of ordained events. Why, then, expose you to the unnecessary anguish that must derive from knowledge of your approaching death?"

From a distance came the protracted whistle of the locomotive, as the train began to slow down.

"I might have asked something else," Mr Pohotny reflected softly.

"Yes, you might have. But now it's too late, unfortunately. This is my station coming up."

"It's not easy to find the right question to ask God."

"I know. But if it's any consolation, it is also hard to satisfy people, as we had already concluded." God stood up and offered his hand to the senior vice president. "Goodbye, Mr Pohotny. It was a pleasure to meet you."

Mr Pohotny stood up and shook the proffered hand. "Goodbye," he replied, although it seemed to him that the word was not quite suited to the moment.

When the train started moving several minutes later, the senior vice president raised his eyes from *Crime and Punishment* and briefly looked out of the window, wondering why they had made an unscheduled stop at this small station. But it made no difference, since there would be no more stops until his destination. Now it was certain that he would be alone in the compartment to the end of his trip. Wisely had he decided not to buy up all the seats! A successful bank vice president must make the proper decision at all times. This was a good omen for the evaluation he must shortly make.

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Zoran Zivkovic's previous stories for this magazine were "The Astronomer" (*Interzone* 144), "The Window" (issue 152) and "The Cone" (issue 155). He lives in Belgrade, Yugoslavia.

ANSIBLE LINK



DAVID LANGFORD

Yet another illustration of sf's predictive power is that real – well, computer – life now imitates the first edition of *Ringworld*. As Microsoft admit in a product support web-page: "When you run Explorapedia and use the Exploratron to look at the Earth spinning, the Earth rotates in the wrong direction."

THE VINEGAR WORKS

Brian Aldiss mysteriously hinted: "Maybe we'll meet at the University of Reading on 29th June? An extraordinary occasion. I've had to buy a suit." Me: "Are they making you Vice-Chancellor?" Aldiss: "YES."

Stephen Baxter won the Philip K. Dick Award for best paperback original (1999 US publication) with his 1997 collection *Vacuum Diagrams*.

Catherine Crook de Camp (1907-2000), US teacher, author and editor, died on 9 April. She married L. Sprague de Camp in 1939 and collaborated with him on much writing under his byline.

Edward Gorey (1925-2000) died on 16 April aged 75. His drawings and writings in 90-odd chapbooks were unmistakable, unique, and driven by a wonderfully warped imagination; but *Interzone* readers surely don't need to be told that.

Harry Harrison visited hospital in April for an angiogram and was kept in for a quadruple heart bypass operation, reportedly a complete success. As Brian Aldiss put it a couple of days later, "He is already looking perky, calling aloud for a glass of tequila and a good ten cent cigar."

Peter Jones, the actor and comedian who voiced The Book in the original radio *Hitch-Hiker's Guide To The Galaxy*, died on 10 April aged 79.

Karel Thole (1914-2000), Dutch artist long regarded as the most distinguished creator of sf covers in continental Europe from the 1950s to the late 1980s, died in March aged 86. His surreal paintings were visibly influenced by Dali, Ernst and Magritte.

Wilson "Bob" Tucker, now 85, will no longer be a familiar face as author, fan and connoisseur of bourbon at American sf events: "I went to my first convention in October 1939 and to my last one in October 1999. Sixty years, that's not too many. And it is a wise place to stop. Some things Beam's Choice can't cure."

INFINITELY IMPROBABLE

2000 Hugo Nominations. Three highlight categories ... Best Novel: *A Civil Campaign* by Lois McMaster Bujold, *Cryptonomicon* by Neal Stephenson, *Darwin's Radio* by Greg Bear, *A Deepness in the Sky* by Vernor Vinge, *Harry Potter and the Prisoner of Azkaban* by J. K. Rowling. Best Related Book: *Minicon 34 Restaurant Guide* by Karen Cooper & Bruce Schneier; *The Sandman: The Dream Hunters* by Neil Gaiman & Yoshitaka Amano; *SF of the 20th Century* by Frank M. Robinson; *The Science of Discworld* by Terry Pratchett, Ian Stewart & Jack Cohen; *Spectrum 6: The Best in Contemporary Fantastic Art* ed Cathy & Arnie Fenner. Dramatic Presentation: *Being John Malkovich*, *Galaxy Quest*, *The Iron Giant*, *The Matrix*, *The Sixth Sense*. (There was glee in sf fan circles at the absence of the vastly overhyped *The Phantom Menace*.) Cheeringly, the Novelette category includes Greg Egan's "Border Guards" from *Interzone*, which also got its usual Semi-prozine nomination.

Publishers and Sinners. *John Jarrold*, whose work for Simon & Schuster's Earthlight imprint had been part-time only, is now a full-time S&S editor. A correspondent helpfully points out the existence of the John Jarrold Printing Museum... *Paul Simpson* decided to "move on" from editing *Dream Watch*, as of the issue 71 relaunch.

More Awards. British SF Association awards for 1999 work: novel, *The Sky Road* by Ken MacLeod; short, "Hunting the Slarque" by Eric Brown, from *Interzone* 141; artwork, cover painting by Jim Burns for Robert Charles Wilson's *Darwinia*. Horror Writers' Association: Charles L. Grant and Edward Gorey were honoured in May as Lifetime Achievement winners; this was announced before Gorey's death. The James White Award will celebrate his memory by encouraging new writers with a prize (plus *Interzone* publication)

for the short story submission deemed best by multiple panels of judges.

Voice from the Grave. Kingsley Amis's recently published letters piss freely on other authors, e.g. "leading young novelists" like Ian McEwan in the splenetic March 1983 epistle to Philip Larkin: "But the one we must put a contract on is D. M. Thomas... Oh, and Christopher Priest and Pat Barker and Maggie Gee are no good. Don't know what to say about M**t** A***. Bet you do, though, what?"

Farewell to Fans. William "Bill" Danner, who published 123 issues of his letterpress sf fanzine *Stefantasy* from 1945 to 1998, died this year; he was 94 and probably the world's oldest sf fan. *Jan Jansen* of Belgium, chief editor of the first international fan newsletter *Contact* (launched October 1956) and of *Alpha*, continental Europe's only fanzine in those days, died at his home near Antwerp on 23 April.

Musclebound. *The Bookseller* lists Arthur C. Clarke's latest essay collection as *Greetings, Carbon-Based Biceps*.

Eastercons. The next two British national Easter sf conventions are Paragon in 2001, whose hotel problems forced a move from the original Blackpool venue to a motorway junction in Hinckley, Leicestershire, and the expensive Helicon 2 in 2002, to be held overseas... that is, in Jersey. SAE for details to Paragon, 379 Myrtle Rd, Sheffield, S2 3HQ, or Helicon, 33 Meyrick Drive, Wash Common, Berks, RG14 6SY.

Thog's Masterclass. "The creatures flew over the seas at an altitude of almost a kilometer, yet their bony heads were on the ocean and not each other..." (Jack Chalker, *The Sea Is Full of Stars*, 1999) "They were both roughly the same age, in their very early fifties, though a hundred years earlier they would have appeared much younger." (D. F. Jones, *Colossus*, 1966) "The police report said there had been a thunder-clap, as if the burning house had disappeared so suddenly that the air had rushed back inaudibly." (John Barnes, *Finity*, 1999) *Dept of Tortured Adolescence: "Girls.* Suddenly they snagged at Whandal's eyes." (Larry Niven & Jerry Pournelle, *The Burning City*, 2000) *Dept of Eyeballs in the Sky:* "Then your eyes cleared. God, I've had your eyes in my head as long as I can remember..." (Nora Roberts, *River's End*, 2000) *Dept of Scientific Units:* "... the world would do well to stick to the [ramjet] system, accepting that Mach 2 as an average transit time was fast enough for anyone." "Slipping and stumbling across tractor tracks ten meters wide and often two deep..." (D. F. Jones, *Colossus and the Crab*, 1977)

I have occasionally toyed with the notion that science fiction could be profitably defined as the literature that describes those eras of human existence undocumented by eyewitness testimony. The main period examined in science fiction is the future, which no one has yet observed; in purported accounts of aliens among us, or secret societies manipulating modern civilization, one could say that science fiction endeavours to deal with unchronicled aspects of the present; and there are finally the millennia of human prehistory before the discovery of writing depicted in the sub-genre of prehistoric science fiction.

The reason why science becomes involved in these stories is simple enough. Authors creating fictions about recognized events of the past 5,000 years or the present can draw upon written accounts (or unwritten accounts preserved by oral tradition) produced by the people who were actually there to give their works an air of authenticity; no other research is necessary. When such accounts are not available, however, authors must base their stories on known scientific findings or their own scientific speculations. As they construct imaginary futures, physics provides accurate projections of future conditions on Earth and in space, while biology and sociology offer less certain grounds for informed guesses about the future of humanity. Authors crafting secret histories of our historical past or present must gather what data they can, from UFO sightings to analyses of anomalies in fiscal policy, to make their vast conspiracies seem plausible (though I will henceforth abandon efforts to include this minor category on the grounds that the vast majority of science fiction deals either with the distant past or the future, whether it is the day after tomorrow or millions of years from now). And authors telling stories about human prehistory must depend upon the evidence and conclusions of anthropology and paleontology.

This is one way to explain why stories about prehistoric humans, in defiance of most standard definitions, have always been accepted as science fiction. H. G. Wells, who originated or popularized most of the characteristic tropes of the genre, wrote "A Story of the Stone Age," which Hugo Gernsback republished in *Amazing Stories*, officially blessing it as "science fiction." Thoughtful novels like Jack London's *Before Adam* (1906), J. H. Rosny Aîné's *La Guerre de Feu* (1909) and William Golding's *The Inheritors* (1955) are discussed in histories of science fiction literature, and even preposterous films along similar lines like *One Million B.C.* (1940), *When Dinosaurs Ruled the*

Prehistory Lessons

Gary Westfahl

Earth (1969) and *Caveman* (1980) are cited in histories of science fiction film. Why not? Everything we know about our prehistoric ancestors, ranging from the sometimes-ignored absence of dinosaurs in their vicinity to the clothes they wore and animals they hunted, stems from scientific investigations of available evidence; we have never listened to actual cavemen and cavewomen describing their lives, and barring some scientific breakthrough enabling us to travel through time or revive a long-frozen corpse – science fiction scenarios that seem unlikely – we never will. So, we must depend upon fossils to imaginatively reconstruct fossil behaviour.

Another way to defend such stories as science fiction would appeal to a definition of science fiction that I have criticized: Brian W. Aldiss's "search for a definition of mankind." One problem is that this search is endemic to all literature and hardly serves to distinguish science fiction as a genre. Still, stories about humanity's distant past or far future might be an unusually effective means of achieving such a "definition of mankind." There are two ways that we naturally define people as individuals, illustrated by the two questions inevitably asked by arriving college students when meeting new peers: "Where are you from?" And "What's your major?," a specialized version of "Where are you going?" In similar fashion, to properly define humanity, we must ask: where are we from? And where are we going? Prehistoric science fiction wrestles with the former question, while futuristic science fiction wrestles with the latter.

This brings to mind another claim I usually have no patience with – that science fiction represents the contemporary equivalent of ancient mythol-

ogy, ignoring their innumerable dissimilarities. However, one service that religions past and present have always provided is answers to otherwise unanswerable questions about humanity's origins in the past (the Garden of Eden, Pandora's Box) and destiny in the future (Armageddon, Ragnarok). So, when people grow sceptical about religious answers, science must step forward to provide its own speculative answers, often presented in narrative fiction.

We arrive, then, at yet another reason for regarding *2001: A Space Odyssey* (1968) as the quintessential science fiction film: it singularly addresses the question from both angles, beginning with the dawn of humanity on Earth and concluding with humanity's rebirth in space. Where are we from? An ability to employ tools, bestowed upon our ancestors by unseen aliens, allowed our species to dominate the Earth, first with bones used as clubs and, more recently, with spaceships. But tool-making only takes a species so far, and the destructive rampage of humanity's newest tool, the supercomputer HAL, along with the ominous prospect of nuclear war highlighted in Arthur C. Clarke's novel, suggests that advanced tool-making might eventually threaten the survival of sentient beings. So, where are we going? As shown in the film's final scene, aliens will somehow re-create us with abilities beyond tool-making, allowing us to eliminate the danger of nuclear weapons and progress to new levels of civilization. (Interestingly, however, since Clarke's sequels recast David Bowman not as the prototype of a new human race but simply as a tool of the alien monoliths, since the homicidal HAL is repaired and again made a useful tool, and since *3001: The Final Odyssey* suggests that the monoliths themselves are, as HAL once was, an out-of-control tool of now-absent aliens, there emerges the perhaps unintended message that tool-making actually is not something that intelligent species do or should transcend.)

If we appreciate human prehistory as a key to understanding our true nature, we can understand our continuing fascination with *Homo neanderthal* – humanity's stillborn twin, in the news again due to DNA discoveries indicating they were less closely related to us than previously suspected. Ancient Cro-Magnons had something that ancient Neanderthals didn't, so we survived while they became extinct; but what was it? Since evidence of tool use among chimpanzees has debunked the once-popular idea employed in *2001* that tools made us what we are, four other theo-

ries can be advanced. First, and most straightforwardly, Cro-Magnons were more intelligent than Neanderthals and hence better able to survive during harsh conditions. Second, Cro-Magnons developed the innate capacity for language that we all have today, while Neanderthals did not, so Cro-Magnons could more effectively communicate and cooperate with each other for their mutual benefit. Third, Cro-Magnons had a strong family structure, while Neanderthal men and women lived apart, so Cro-Magnon men and women working together were better able to cope with adversity. Finally, Cro-Magnons were more violent and aggressive than peace-loving Neanderthals and thus were able and eager to slaughter their competitors.

Establishing one theory as true would effectively define the essence of humanity. Perhaps we truly are, as we named ourselves, the Wise Species, *Homo sapiens*, although much human behaviour, then and now, has been noticeably less than wise. Perhaps we are best regarded as the Language-Using Species, although we can now train other primates to employ basic language. Perhaps we are the especially Social Species, although many of us wouldn't exemplify that very well. Finally, and most dishearteningly, perhaps we are simply the Born-to-Raise-Hell Species, although we regularly celebrate peace, love and understanding. My problem with the first three theories is that many mammalian species on this planet have been considerably less smart, less communicative and less sociable than people, yet they have survived and prospered; noting the spectacular success of *Homo sapiens*, one would imagine that even half-assed, inferior versions of human beings could contrive to avoid extinction. Thus, I suspect that we are the only surviving species of *genus homo* principally because we didn't really enjoy the company of half-assed, inferior versions of ourselves and so wiped them off the face of the Earth.

Other theories are possible. Perhaps virulent disease decimated the Neanderthals while Cro-Magnons luckily developed a natural resistance. Or one could combine the language-ability theory and the violence-loving theory, as explained in one of John W. Campbell, Jr.'s editorials. His charming conjecture was that humans came to universally possess an aptitude for language through a rigorous policy of selective breeding: when tribes encountered a boy who couldn't talk, they slit his throat, so that only talking people grew old enough to have children who would inherit their talents. (It is only fitting that the interminably garrulous Campbell would so cheerfully envision a science-fictional

world of the past where people were murdered for lacking the gift of gab.)

No matter how much our knowledge of human prehistory improves with new discoveries and techniques, it may always be impossible to say precisely why our species rose to the top – which might mean that the small and marginalized sub-genre of prehistoric science fiction will eventually prove the form of science fiction with the greatest longevity. We are moving into the future that we once only envisioned: we will soon enough learn whether our species is going to exterminate itself or conquer the universe, we will soon enough discover alien civilizations or prove that they don't exist. Some scenarios employed by science fiction writers to explore definitions of humanity, like the development of artificial intelligence or the creation of new human species, will actually occur, becoming topics for research and analysis instead of imaginative storytelling. Humans will perpetually face an unknown future, but they may not regard it as evocative or revelatory. However, alluring mysteries about the true origins of humanity may keep inspiring storytellers to offer fresh speculations about our prehistoric ancestors.

Whether future humans will always be fascinated by stories about cavemen and cavewomen is impossible to say, but I will offer one prediction with absolute confidence: certain fictions to the contrary, future humans are not going to become cavemen and cavewomen.

I have neglected one other type of science fiction story involving prehistoric humans: those that depict such people as our descendants. We all know the story: a young tribesman in a fur loincloth, defying the old taboos, ventures into "The Forbidden Zone" and discovers the ruins of a long-vanished civilization – *our* civilization, destroyed by nuclear war or a similar disaster. Noteworthy versions of the story include Stephen Vincent Benet's "By the Waters of Babylon" (1937), Andre Norton's *Star Man's Son* (1952) and the film *Teenage Caveman* (1958). Without envisioning such extreme cultural amnesia and barbarism, other post-holocaust stories posit a devastated future humanity reverting to the habits and customs of American Indians, medieval knights, or cowboys. And, like other ideas from science fiction, such scenarios are beginning to influence policymakers: in one section of Gregory Benford's fascinating *Deep Time*, he describes serving on a government commission charged with devising a lasting and universally recognizable warning to keep future citizens away from stored nuclear wastes, as if bureaucrats really feared that,

someday, marauders out of a *Mad Max* movie might cross the New Mexico desert and stupidly storm into radioactive caves in search of plunder unless they observe some iconic equivalent of the Skull and Crossbones that persuades them to depart.

It is better to be safe than sorry, and one cannot wholly discount Benford's intelligent speculations about possible future societies that forget or don't care about our great accomplishments and irresponsible actions. However, we must base projections of humanity's future on the patterns of humanity's past, and both prehistory and history demonstrate that humans are collectively very good at remembering things. Ancient humans learned to make and use various tools, knowledge that was invariably passed down from generation to generation. Throughout history, a few people have always been dedicated to preserving the memories and wisdom of their precursors; when information has been lost, later scholars have struggled to devise new methods to retrieve it. Today, out of the six billion people on the planet, surely at least one billion of them possess – in the forms of books, manuscripts, recordings, artworks, computer files, or sharp memories – some substantive portion of the accumulated knowledge of our species. The notion that a nuclear war, lethal plague, or asteroid impact will somehow erase all of this, condemning our descendants to ignorance and primitivism, is implausible in the extreme. If global disasters do occur, it will take us some time to recover; but eventually, thanks to everything we have learned, the human race will begin again – from where we left off, not the very beginning.

As children naturally love their parents, we are naturally fond of our prehistoric ancestors: we dream that a few of them may have survived as the legendary Yeti or Bigfoot; we symbolically drawn them into our own worlds in films like *Iceman* and *Encino Man*; we welcome news that a "caveman diet" of meat and vegetables might represent the healthiest possible regimen; in wilderness outings, we briefly re-enact the hunting and gathering activities of prehistory; and we contemplate with concealed elation a projected future when, coming full circle, humans might return to the simple, invigorating lifestyle of our earliest days. But in this respect as in others, we cannot, and should not, go home again – except, of course, while reading science fiction, the form of literature that uniquely allows us to imaginatively visit not only our future but also our distant past.

Gary Westfahl

Out to Grass

Roy Gray

Anton leaned forward and flicked the magazine's cover over with the inside blade of his left horn. The pain of twisting his neck to turn the page left him cursing the Somatic Weapons laws again. After their adoption his horns had been blunted. Now the only useful edges faced inwards. He checked the index of the two-year-old issue of *bodYSculpt*. He'd probably read it when new but couldn't remember.

Top billing was Hanif Khalill's description of a then-new procedure for extending the lungs through the ribs. It was the "bust-enhancement choice of the stars." Direction started with "take a very deep breath"; then the cameras rolled, clicked or hummed; once they stopped the star could exhale. It was a lightweight solution for actresses, models and athletes but had never caught on in cosmetic biosculpture. Anton remembered Khalill; he had been interviewed by him about ten years before. He lost interest when the article debated the pros and cons of blood-infused versus air-infused tissues for variable-geometry torso enhancement.

The waiting-room lighting was poor, so he put the magazine back on the rack and wandered over to the terminal near the window. The room was almost dowdy and the décor somewhat shabby, bleached brown furnishings, threadbare upholstery, but the surfaces were clean. Anton knew he had come down in the world since that interview, and so had Khalill, if he was reduced to writing for paper-mags like *bodYSculpt*. That was no real consolation – he would rather they were both still successful.

Outside, suburban Watford shimmered under the afternoon sun, but it still looked a place to avoid. Anton peered at the monitor, an old-style type with a solid, inflexible screen. The display was cycling through the clinic's biosculpture menu headings. They were all pretty standard; Cosmetics and Teeth, Sexual, Gender, Age Remediation, Organ Farming, Ethnic Retype, NHS Damage Repair and Natal Defect Correction. No sign of now-state biosculpt like Noömatics, Extrasensing or Ontogenics. Was there a hidden list with headings like Somatic Weaponry, Narcotic Glanding, Biometric Cloaking, Revirgination? They were of no interest to him but this seemed the sort of unquestioning establishment where they might be done.

The screen clock showed 15:15 hours – it was past time for his call. Anton glanced across at the door to Dr Shirraaz's office. No signs of activity, so he called up the Age Remediation Menu and checked out today's prices. AR prices were the best to compare but were more volatile than the indexes. A first-time five-year heart windback looked reasonable at 7,000.

He heard a door open and looked round to see a small woman, perhaps 30, and with no sign of extravagant sculpting, cross to the main door and hurry out into west Watford. She never gave him a glance. Anton watched through the window as she walked briskly away towards the Underground. She didn't look back.

He turned towards the office again. The door reopened

and a tall silvery-haired Indian came towards him with his hand outstretched.

"Mr Breyer, celebrity clients are an unusual experience for me – oh, um, sorry," he said, looking embarrassed, and patted Anton on the shoulder instead. "I'm Dr Shiraaz. Come in."

"Don't worry." Anton waved his right glover. "You're not the first." He followed Shiraaz into his study, which looked bright and clean. A sophisticated computer terminal sat on the desk. "My celebrity is somewhat faded now, so don't expect a media siege." Through an open side door he saw another room with an examination couch and medical equipment.

"Can you sit or do you prefer to stand?" Shiraaz asked pointing at a chair by his desk.

"Easier to stand, thanks."

"Fine. Legally I have to counsel you before any detailed discussion of your requirements or their pricing. I also have to say that I am now recording this consultation for review by the European Human Biosculpt Authority and, possibly, the All-India Bioethics Council." He turned, pointing to a Sonybond system mounted high on the wall beside his desk.

Anton was well aware of the legal formalities and recognized the camera system. It automatically tracked to follow the speaker. "I know the form. I am not keen to go to India, so there should be no need to file with the AIBC. But carry on for now."

He had heard the warning tone as it went live, but there was no noise when the camera and microphone swung towards him. Perhaps this place was clean. He doubted he would ever know.

"Very well," said Shiraaz. "Once the counselling is complete I can shut down the recorder and all future consultations will be completely private. However details of major changes to your appearance, following any treatment, will be forwarded to the European Authority for Identity Supervision."

Shiraaz paused again but Anton just nodded assent, keen to keep events moving. The doctor continued. "Excuse this if you have heard it before. 'My license allows me to conduct non-NHS biosculpt procedures on adults only. Anyone registering for those procedures must have the permission of their physician and must be tested and shown to be free of the influence of any of these listed narcotics and noötropics.'"

The usual list was displayed on the monitor he swung to face Anton. The table of two columns, technical and "street" names side by side, more than filled the screen.

"Please read the first four out loud, from either list."

"Booze, speed, coke, hiliift." The display began to scroll down at a rate that kept pace with Anton's reading speed. Having demonstrated he could read, he carried on in silence while Shiraaz waited.

When the scroll stopped Shiraaz turned the monitor back. "My license does not cover treatment of any disease though I can repair injuries by replacing lost or dysfunctional organs and limbs. Cerebral biosculpt is also outside its terms. You understand?"

Anton nodded agreement.

"Mr Breyer agrees," Shiraaz said, for the camera, then continued. "All procedures carry a risk of failure and possible permanent injury. Where quantifiable, the degree of risk will be assessed and displayed to you. You must approve that statement and are advised to seek independent advice where any risk is marked as being above the EU median."

"Understood," Anton answered. The office was warm with a faint lemon cleaner scent in the air. His thoughts drifted as Shiraaz talked about mandatory insurance cover, identity threading, convalescence timing and family notification rules. It reminded him of pre-flight safety briefings. They had hardly changed since propeller power and nobody listened now. Why worry if accidents on long-distance flights, via the edge of space, left you smeared over half a hemisphere? The office was cooler than outdoors, but not much. He listened for the air conditioning but it was not obvious. He resented having to pay for all the extras the law required but he thought he had saved enough to cover everything. Shiraaz was reputed to be both good and inexpensive but the regulations added to everybody's expenses.

He paid more attention when the Sonybond was shut down. "We don't need that now." Shiraaz said as its off warning sounded. "They've made this industry a euro-cratic nightmare." They both smiled at the old joke.

"I must say," Shiraaz continued, "before we go too far, that I rarely undertake the big changes here. When the price rises beyond 9,000 euro it becomes very cost-effective to use our New Delhi clinic. I am a part-owner. We do high-quality work and do so at very competitive prices. We use MacroSculpt SyStems, exclusively. Everything will be compatible with your present sculpt, even though much of that is first-generation. And don't forget that the tax advantages – no VAT, we bill offshore – more than compensate for travel, accommodation and communication costs. The low prices are an extra bonus."

Anton was doubtful.

Horns always make faces difficult to read, but Shiraaz must have realized. "The reason I have some small reputation in this business is my method of working. I assure you I will be telepresent, at your side in Delhi, for the major elements of your treatment. After you return I provide the after-sales service, as you might put it, here in Watford. So really you get the best of both worlds." He smiled at his little joke. "But don't worry now, I'll check your details and give you a quote. Take it away and make your decision."

"Your medical records and access permissions arrived and, I must admit, while there are many things I could do for you I can't see the point with your present level of biosculpt. Forty-three is young for any age-remediation and none of your organs need replacement yet. So I assume you want something reversed and a new feature in its place." Shiraaz opened a drawer, picked out an instrument, stood up and walked round to Anton. "Your records show that you are remarkably fit for your age but, as a multiple Olympic gold-medallist, that shouldn't surprise me."

Anton recognized the device and leaned his head to the left, exposing his neck. He felt Shiraaz push his collar down and place the Anatech on his bared skin. Something clicked, then after a moment Shiraaz said, "Breathe

in, please." A second click, then the pressure on his neck ceased.

"I cannot fault your records – you are as fit as they indicate." Shiraaz returned to his seat. "I saw the news after your first heat, 2012 was it?"

Anton nodded his assent.

"When you opened that trackwrap; what a shock! And then that first race, a hundred metres in eight seconds. Everyone went wild. All those protests. I know you were prepared for an uproar but it must have been worse than anything you expected. Sorry, you must have heard this a million times."

"The protests were no problem." Anton's laugh was bitter. "The British humour was the surprise. All those jokes and headlines – 'reined in,' 'put out to grass,' 'retired to stud,' remember? They seemed funny... at first."

Shiraaz nodded in sympathy. "Yes, I remember." He changed the subject. "I suppose I ought to ask what you want from me. I won't try to guess." He looked at Anton expectantly.

"Everything reversed." Anton's voice was fierce, "Make me normal again."

Shiraaz's eyes widened. "Are you sure?"

"Never more so."

"We should define *normal* first, I think."

Anton shook his gloves in Shiraaz's face. "Normal hands, proper arms, straight back," he touched the gloves to his horns, "normal head." He pushed his tongue out to its full extent and curled it back to touch his eyebrow, "thort tongue," then collapsed it back, "short tongue, normal length anyway. Ditto for penis. What's to define?" His voice rose as he finished.

"Look at your genome chart. You have a fine head of blond hair now," Shiraaz answered, "but bald and grey is your genetic destiny. If I remove your horns should I resow any hair in their place? For you, *normal* looks like bald, and it might mean gingivitis, tooth decay, myopia –"

"Right, OK" Anton's voice softened. "I'll go bald but I'll keep my teeth. Body hair: tell me how much to get it back. If it's within my budget I'll regrow it. If not I'll do without. I want to restore myself to normality. I want to go back to where I would have been without biosculpt." He finished with a pleading edge in his tone.

"Fine, let's see now." Shiraaz began to study the screen. He looked up. "Would you like coffee or tea? Feel free to use the drinks machine over there. You've made an unusual request – I'll take a minute to review your records again."

Anton turned. There was a hot-drinks dispenser mounted on a shelf on the wall behind him. It had been hidden by the open door when he arrived. He went over. A red light showed it was working. He bent forward and touched the black coffee button with a horn. A cup dropped and started to fill. The scent of roast coffee filled the air.

"Would you like one, Doctor?" He shook the claw grip free on his right glover as he called.

"Not now, thank you."

Anton clasped the drink with the grip and carried it back. He noticed that the cup was slightly squashed but

not enough to cause a spill. His grips had sufficient embedded intelligence to exert the correct force but they needed calibrating once a year. He had delayed it to save money, but maybe he'd better not wait much longer. He switched to the left claw and lifted the now round cup to chin level. As usual the left grip was in better shape. He tubed his tongue and took his first slurp.

Shiraaz looked up at the sloosh sound. "Ahh!" he smiled, "I remember you doing that for the first time on *Doctor Who 3D*. It did look alien; my children both wanted a tongue like yours. You were very popular. I suppose that compensated for your unpopularity after the Olympics. I can't grumble. You put biosculpt on the map and that led me to this business." He looked back at his screen. "Excuse me, I won't be long now."

The coffee was excellent. Anton drank the rest.

"I think I had better examine you," Shiraaz said. "I'll do it next door – would you go through and undress. Use the couch if it's comfortable."

Anton moved through, horning his right glover back to a Velcro grip pad as he went. Then he did the same for his left glover and began to undress once inside the examination room, which was bright and clean with a high ceiling. He recognized the range of Terahertz Pulse Imaging scanners and their displays fixed on frames folded back against the wall. He kicked off his shoes, then the noise of his Velcro-seamed clothing ripping open rasped loud in the silence. The couch was flat and covered with a white crepe paper disposable sheet. Shiraaz arrived as Anton finished undressing.

"I'll reconfigure this for you." Shiraaz stooped at the side of the couch and began to push and pull at several handles mounted on the lower frame. The flat top arched as the ends dropped, leaving the central section's height unchanged. "Right, drape over that when you're ready and I'll check your spine first."

Anton tugged off his gloves last, snagging them to his horns by their back loops and leaving them to hang there. True, it looked silly, but it was fast and made life much easier when it was time to dress. He reared up and then subsided onto the couch. He heard a motor hum as Shiraaz raised it. Soon he was too high to touch the floor.

Shiraaz began to pummel and manipulate his patient's spine. "I have to ask this, it's a legal requirement for the medical procedure counselling laws, but I really am interested as well. I can see that your present biosculpt level makes life awkward but a complete reversal will be a very radical sculpt followed by a lengthy period of physiotherapy. You'll have to learn to walk and use your hands all over again. That won't be quick or easy." He pulled a scanner out from the wall and suspended it looking down from the left at Anton's back. "You won't be able to act the sort of roles you are famed for any more, which is not a good career move. So, why do you want to do it?" Shiraaz stepped over to a monitor on the wall and began to peer at the display.

"The bottom's dropped out of the aliens market. I'm far from unique now and *Doctor Who* is 14 years past. I haven't even been offered a pantomime, chat or quiz show this year. All I get offered is convention appear-

ances and festivals.” Anton dropped his head back to the couch. “It will be much easier to live as a normal and I won’t be recognized in the street, which will be a great relief I assure you.”

“Will you lie as still as possible for a few minutes, please. You can talk, unless I stop you, but these scanners need a reasonable build-time to get good 3D images. Also I have to move them round and fill out all blank spots to assemble a complete profile.” Shiraaz was busy pulling more scanners into position. “The couch will begin to move through the scan field soon. It will track a metre fifty in total. Is street recognition a problem for you? Is it the public or the media who bother you?”

“People don’t really bother me here but they recognize me. There’s an expectation: Olympic gold, world record, famous – well, sort of – actor. There’s a sort of pressure to live up to your image. Everyone expects me to be wealthy. I’m not; I can’t afford to live like this much longer. It’s cheaper to be normal.”

“Your programmes are still shown. Surely you get royalties? I saw one of your old shows not so long ago.” Shiraaz lifted the gloves from Anton’s horns, placing them on a shelf on the wall.

“I amortized all my future royalties in 2028. It seemed a good idea then. The money from that ran out. Three divorces, four children, it soon goes, and new work has dried up. Biosculpted actors are not exactly unique now and science fiction is out of fashion since 2025.”

“Didn’t you make a pile from the Olympics? I remember some bookies went bankrupt.”

“Athletes can’t bet. That would have been just the excuse they needed to disqualify me.” Anton’s voice was bitter. His backers had made millions by spread-betting ten millisecond units for best sprint times under 9.15 seconds. Then they launched Macro SyStems on the proceeds and made billions. He hadn’t been offered the chance to invest.

Shiraaz waved a remote control, “Right, here goes. Keep still now.” The couch began to move. There was a slight whine from a motor but the movement was almost imperceptible to Anton. “I suppose you’re still *persona non grata* with the athletics commissions? Do you think you’ll ever be forgiven?”

“I can talk now?”

“Yes, carry on.”

“Not while my 100- and 200-metre records stand. They aren’t going to be broken by any normal sprinter. Not on this planet anyway. They won’t forgive me until we set the Olympics on Mars. I’ve taken all the glamour out of two major athletics moneyspinners.”

“I don’t remember the background now, 2012 was a long time ago. How did you and your backers spring the surprise? Why weren’t you banned earlier, in the qualifying rounds?”

“I’m a Luxembourg native. Their only good 100-metre man at that time. I wasn’t a world-beater but I had no need to run any qualifying races. That’s why I was offered the biosculpt. So, when I appeared in the heats, it was too late for a ban. Technology always runs ahead of the law. They did an awful lot of drug-testing, I tell

you, but I was extra clean and kept my own bonded samples very safe.” Anton felt the couch stop, then it reversed, quickly returning to its original position.

He quieted as the noise of the motor increased.

“Yes, I remember the furore,” Shiraaz said. “You had a tail once. It’s gone now. I don’t remember seeing anything in your records. When was that?”

“Yes, I had it for pantomime. It got some good laughs when I whipped it around, and I had a brilliant ‘it’s behind you’ routine which the youngsters loved, but I couldn’t control my bowels. I had it reversed five years back.”

“Ahh, it is here.” Shiraaz peered at a monitor on the wall. “I had better check that I have not missed more. Can you show me your hands?” He lifted Anton’s left hand and gently examined it. “Not much hand function but plenty of cushioning. Can you move the fingers at all?”

“Not really. The wrist works but it was beefed up to take the impact so there’s a sort of heel in the palm.”

“Hmm, I see. We would do it differently now. You would retain some function.” Shiraaz took Anton’s right hand. “Yes, much the same.” He turned back to a scan image on the monitor. “We can rebuild them. Learning to use them again will not be easy and could be painful for you.” Shiraaz lowered the couch. “When you get off the couch can you do a police spread against it for me? I’ll need to examine your penis. I have to say that penis reduction is not a frequent request.” He fetched a pair of latex gloves from a wall dispenser.

Anton leaned forward, bracing himself on the couch and splaying his legs. “I feel like a bull on one of those artificial cows,” he said and then stiffened as a gloved hand grasped his penis.

“According to your records this was done about five years ago.”

“Yes I was er... ‘docked and cocked’ as my agent said. There were some jokes at the time because I lost one tail and enhanced another at the same sculpt session. I was desperate for work and took some porno film roles.” Anton relaxed as Shiraaz stood up and moved away.

“You can get dressed now,” Shiraaz said. “Will you need any help?”

“Can you pass me my gloves, please?”

“Ahh, sorry.” He held them out so that Anton could slip them on.

“Thanks, I’ll manage now.”

“Very well. I’ll be back at my desk. Call if you need any help, and come through when you are dressed.”

When Anton returned Shiraaz was drinking coffee. Anton refused the offer of another for himself.

“I can tell you that we can do what you want, and that the price will be less than 80,000 euro,” Shiraaz said. “I will send you a quotation and contract but not until I have consulted my colleagues in India and confirmed the final price. Once our quote arrives I advise you to seek legal advice. The price will include all the biosculpt, travel, accommodation and physiotherapy. All at New Delhi BioSculpt. I can’t do it here.” He paused as if waiting for Anton’s comments.

“I’ll think about it,” said Anton. 80,000 was pretty

good, half the BiPA quote and below his limit.

"The reason I advise you to seek legal advice is that this is a very unusual request. It seems to be a first, in fact. If so, we may offer a discount of 5,000 if you allow us to use your case for publicity purposes. This is not a promise and goes against your stated intention to return to leading a normal private life." Shiraaz spoke slowly and deliberately. "Don't make a positive decision without careful consideration of the consequences." Then he smiled. "You can go. I'll see you again if you like our quote."

He stood up and patted Anton on the shoulder. This time he didn't offer to shake hands as he held open his office door. Anton noticed the waiting room was empty. The old papermag he had browsed was prominent on the rack as he passed, Khalil's name capitalized on the cover.

Anton stepped outside and found that a late-afternoon breeze had dissipated some of the heat of the day. It was quite pleasant now, though Watford remained its ugly self. The biosculpt surgery was located on an industrial estate that straggled along the A412. There was traffic on the main road: he saw two Ford Gazelles dash past a pair of old Merc trucks and a heavily laden BMW Phant, which was trundling along behind, but the estate service road that ran parallel was quiet. The feeding bays distributed

alongside were full of returned anicles, some of which looked a bit restive – probably because it was near homing time. The unconverted parking areas were half empty.

Less than 75,000 euro and a chance of some media attention again. This might be just the publicity he needed to get a contract for an autobiography. Perhaps I should call Khalil, he thought. Better mend my fences with the agency first. Lengthy "resting" periods were never good for actor-agent relationships. Suddenly he felt quite cheerful. Maybe the Asian Biosculpt reputation was unfair. He would check it out.

The service road led to the Underground, so he ambled along watching out for anicle droppings. None were visible. Obviously a sweeper had passed through recently. The movement ruffled the hair between his horns. At 75K euro he could afford a re-sow once the horns were gone. Why go bald? he thought cheerfully. He passed a sign: "London Regional Transport, Underground 250 metres."

He broke into a trot, then a canter. At the 200-metre mark, Anton was in full gallop. He wouldn't break any more records but he would do it in 20 seconds.

Roy Gray is a new writer who has previously contributed occasional theatre reviews to *Interzone*. He lives in Macclesfield, Cheshire, and the above piece is his first published story.

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REVIEWED

Shorts and Mediums

Tom Arden

It is often said that short stories are harder to write than novels. I've never believed it myself. A short story is about 5,000 or 10,000 words long. A short novel – say, of the John Wyndham sort – is 70,000; blockbusters of the *Dune* variety run to about 200,000. Of course novels are harder to write, if by harder you mean they take more time.

Ah, you say, but that's not the point. In the wonderful world of writing, there are no marks for effort. Any old hack can fill up space; it's being memorable, moving, individual and all that in a *small* space – that's the test. And there's truth in this. But this is setting a high standard for the short story. There are plenty of stories that pass the time, often agreeably. But how many do you really remember, once you've put them down?

Being more of a novel-fancier myself, my automatic answer would until recently have been "Not many." Now, after reading two new anthologies, Gardner Dozois's *The Year's Best Science Fiction: Seventeenth Annual Collection* (St Martin's Press, \$29.95), and the all-Canadian showcase, *Tesseract*⁸, edited by John Clute and Candas Jane Dorsey (Tesseract Books, Canadian \$9.95 pb, \$23.95 hb), I might just have to say "Well... a few, actually."

First, Dozois. I sup-

pose that sf lost its innocence long ago, but there is something a little forbidding about this brick-like volume with its official-seeming summary of the year just gone, its helpful introductory comments on the authors, its lengthy list of honourable mentions who were good, but (we are to understand) not damn good enough to make it into the anthology. None of this is as much fun as a single tattered pulp mag with a monster on the front.

So who wrote 1999's best sf? Dozois includes 27 stories, all by different writers; all are anglophone, and of these, 16 are American, six British, two Canadian (if you count Geoff Ryman), and three Australian. I should add that all but four are male, which for all I know reflects the proportion of female to male sf (as opposed to fantasy) writers; one might note, indeed, that at least one of the female-authored stories – Eleanor Aranson's "Dapple," about a female furry creature's struggle to act, in a world in which acting is forbidden to her sex – is actually fantasy by anyone's definition.

That's the authors; where do the stories come from? Interestingly enough, no fewer than nine – a third of the book's contents – are culled from the pages of *Asimov's*. Perhaps more interestingly, the runner-up mag, with four stories, is the very one you are

reading now. The *Interzone* stories, for the record, are "Everywhere," from issue 140, Geoff Ryman's charming if unlikely evocation of a utopian north of England; from 142, Tanith Lee's erotically-charged science fantasy "The Sky-Green Blues"; from 145, Alastair Reynolds's "Galactic North," a sort of Peter F. Hamilton space extravaganza compressed into – oh, about half of one per cent of the length; and from 148, Greg Egan's far-future fable, "Border Guards." Of the remaining stories, three are from *F&SF*, with one each from *Absolute Magnitude*, *Altair*, *Amazing*, *Analog* and *SF Age*, and the rest from a few anthologies.

Enough counting. Are there predominant themes? In a great many stories, there is a sense that our humanity is slipping from us, giving way to post-humanity. While Egan – if I read him correctly – dares to ask whether this is such a bad thing, others take a bleaker view. David Marusek's dark comedy "The Wedding Album" is a case in point. This is set in a future society in which, just as we now take photographs, people produce "sims" – simulations, or virtual versions of themselves – to commemorate the high points of their lives. With considerable ingenuity, Marusek explores the consciousness of sims, asking us to consider the difference between a real and a virtual person.

Post-humanity of a different kind informs Robert Reed's "Winemaster," an intriguing story of a future in which much of the populace have discarded their humanity, downloading themselves into microscopic machine entities known as the "Transmuted." Chris Lawson's "Written in Blood" – less a satisfactory story than a series of vignettes – uses the prospect of a racially-specific plague to explore notions of religion, tribal loyalty and racial prejudice.

It was to be expected that VR and biotech would loom large in a current sf anthology, but older themes have by no means vanished. There are time-travel tales from Michael Swanwick, Robert Grossbach and Kage Baker; there's alternative history from Robert Silverberg, and a futuristic dystopia – somewhat after the manner of *The Handmaid's Tale* – in Charles Sheffield's "Phallicide."

Space exploration also looms large, figuring in at least nine stories. Some of these, admittedly, are underwhelming. In "A Martian Romance," Kim Stanley Robinson goes to Mars – again, while Ben Bova's "Mount Olympus," also set on Mars, has a party of tediously macho explorers finally discovering – after thirty pages – that there is indeed life on Mars, in the form of "iron-eating bacteria." The Moon does better with two fine stories, Stephen Baxter's "People Came from



Photo: Paul Brazier

John Clute

Earth," about the dying days of a lunar colony, and Paul J. McAuley's droll tale of the Moon vanishing into a black hole, "How We Lost the Moon. A True Story by Frank W. Allen."

One of the best stories is also the most difficult to categorize. James Patrick Kelly's "10/16 to 1" is a time-travel story, a nuclear holocaust story, an alternative-worlds tale and probably much else besides. Set at the time of the Cuban Missile Crisis, the story begins with a twelve-year old science fiction fan – the sf nostalgia is very well done – meeting with a man from the future, who has come back in time to prevent World War III. Suffice to say that if this isn't a movie, just crying out to be made, I don't know what is. As a story, it's also near-perfect: charming, funny, frightening and thought-provoking, all in 17 pages. If I remember one story from this anthology, this will be the one.

Canada is a country widely perceived as boring by those who don't live there; perhaps, indeed, by many who do. Why this should be so I can't imagine; entranced by a volume of *Encyclopaedia Canadiana*, I once fantasized about going to live there for at least a full week, until I found out about the mean-spirited immigration laws. The trouble with Canada is that most of us don't know much about it; it seems to vanish into the glare of that other country, whatever its name is, that lies directly to the south.

The *Tesseract* anthologies are on a mission to fill, as it were, the Canada-sized hole which inevitably appears in selections such as Dozois's. The eighth in the series assembles 15 stories (and six poems, about which I shall remain, I suppose, uncharitably silent) by 19 mostly little-known Canadians, including at least seven women (some use initials, so it's hard to tell), and three francophones in translation. It's all much less imperious than *The Year's Best SF*, with notes on contributors less likely to mention that Writer X has won the Hugo and the Nebula and is a "graduate" of Clarion West (do the Clarion workshops confer degrees?) than that she lives in Montreal with two cats and has an unpublished novel in the bottom drawer.

A question to ask about such an anthology is how many of the stories are notably "Canadian." If this means "set in Canada," the answer is easy – four. In Sally McBride's "Speaking Sea," a fortyish academic couple, holidaying in a last-ditch attempt to save their marriage, discover a strange plastic-like material – harbinger of an alien invasion – strewn on Vancouver

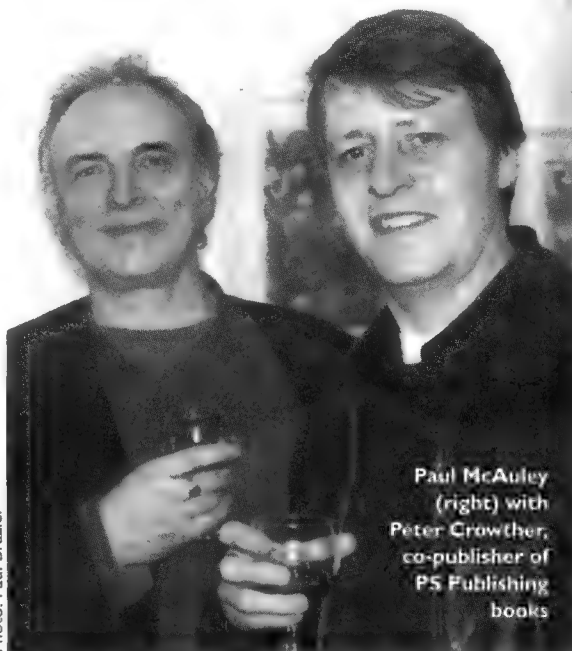


Photo: Paul Brazier

Paul McAuley (right) with Peter Crowther, co-publisher of PS Publishing books

Island's Long Beach. In David Nickle's "Extispicy," an Ontario real-estate developer masterminds his career from auguries derived from cuts on the faces of car accident victims. Cory Doctorow's "Home Again, Home Again" is a black comedy of family dysfunction, psychiatric counselling and the pleasures of self-electrocution, set against a futuristic Toronto; while Ursula Pflug's "Rice Lake" has a group of friends, contemporary Canadians, summoned by fire circles in the snow to play – or be Played – in a mysterious ritual they call The Game.

All are fine stories, but – for the outsider at least – it is hard to see that the Canadian setting makes much difference. Pflug, one notes, is every bit as evocative, indeed more so, in "Gone with the Sea," an elegiac vision of impending post-humanity in a future

Hawaii. For the most part, the authors favour those out-of-this-world settings beloved of sf authors everywhere, perhaps (could it be?) revealing their Canadian-ness in a predominance of downbeat, dystopian themes.

A great many of the stories are bleak – for example, Hugh A. D. Spencer's "Strategic Dog Patterning" (killer dogs on the loose, in decayed future city), John Park's "Viking" (cyborg wars, in decayed future city), Rene Beaulieu's "The Energy of Slaves" (exploited workers, in dehumanized future city), and Daniel Sernine's "Umfrey's Head" ("The stargates are our only hope," says the hero, but since everyone else prefers VR, humanity is doomed). In this context, Francine Pelletier's "The Sea Below," a tale of reproductive dilemmas on a space station, seems positively cheerful, for all its gruesome gushings of amniotic fluid.

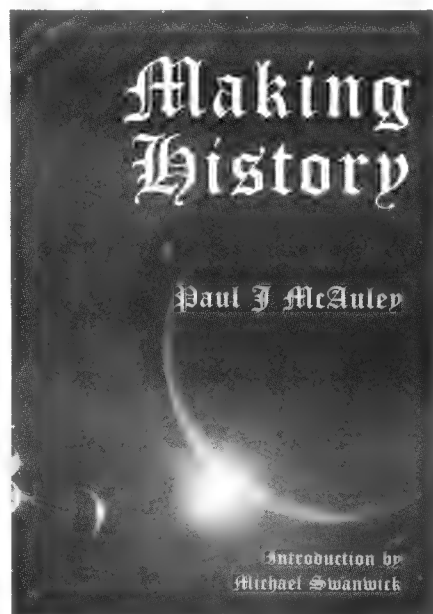
Imagine *Star Trek: Deep Space Nine* with added drug abuse, sex and violence.

There are several out-and-out fantasies. "The Smokestack in the Desert," by J. Michael Yates, is a brief but memorable ecological allegory; in "Within the Mechanism" by Yves Meynard, a woman reanimates the corpse of her lover; while Sara Simmons, in "The Edge of the World," has a ship, in a world believed to be flat, setting sail for... yes, you've got it.

Particularly impressive is "The Dark Hour," by A. M. Dellamonica, in which an orphaned black boy in New Orleans cuts himself off from the human race, taking a crow as his only family: "He didn't say a word to another human, black or white, until Contact, the day that emissaries of seven alien races came to Earth, transmitting messages of friendship from their fragile, exquisite spaceships." And that's all in the first page...

Introducing *Tesseract*⁸, John Clute remarks enigmatically that "There are two or three stories here which I think may one day be understood to be great; but I won't load the deck by pointing them out." Oh, come on... Well, I suppose this is what they call a challenge – or a parlour game. For what it's worth, Doctorow was *my* favourite; Dellamonica was good too... but if we want an expert hint, let's note that Dozois's *Year's Best* – yes, the one reviewed above – features a story called "The Dragon of Pripyat" by Karl Schroeder, a powerful tale about mysterious goings-on in the radioactive environs of Chernobyl, which comes from – where else? – *Tesseract*⁸.

And finally... when is a short story no longer short? By a rough count, Paul J. McAuley's limited-edition chap-



book *Making History* (PS Publishing, 98 High Ash Drive, Leeds, LS17 8RE, £8 pb, £25 hb) runs to about 20,000 words. Is it a novellette? Is it a novella? Whatever it is, it's good.

The story is set in a colony called Paris, located on one of the moons of Saturn. After an attempted war of independence, the colony has been decisively crushed by the forces of

Earth. As the authorities begin a reconstruction programme, elderly historian Professor-Doctor Graves is sent to Paris in order to record the story of the war for the archives, but soon finds himself caught up in a web of treachery and erotic obsession. Set in an era where democracy is no more than a quaint memory, this is no simple political allegory but a complex exploration of political possibilities,

exposing rebels and reactionaries alike as limited beings caught in a web of history they cannot control.

If being memorable, moving and individual in a small space is the mark of a good writer, *Making History* offers yet more proof – if we needed it – that Paul McAuley is a very good writer indeed.

Tom Arden

www.tomarden.com

The publication of two generous compilations of the works of Charles L. Harness – *An Ornament to His Profession* (NESFA Press, \$25) and *Rings* (also NESFA Press, \$25) does their author an overdue honour. The stories in the first volume and the novels in the second are sf of a bracingly exuberant kind, showcases for a joyous metaphysical energy that has few parallels in genre fiction. There are literary sins for which Harness positively begs forgiveness, notably illogical plotting, hugely exaggerated romanticism, and espousal of daft over-ostentatious gimmicks of pseudo-science; but the compensations of ingenuity, mad eloquence, and sheer archetypal appropriateness are so great that forgiveness is very readily extended. Why practice caution when empires, universes and entire systems of thought await overthrow, inversion or perverse renovation?

Harness, whose first story appeared in 1948, owes some of his critical neglect to his intermittent commitment to sf; work as a patent attorney took priority for most of his adult life, restricting any great productivity to phases in the late '40s and early '50s, the mid-to-late '60s, and the period since his retirement from the law. Perhaps also because of this, he has remained a writer true to his formative period, influenced strongly by A. E. van Vogt's dizzy pulp oneirism and by John W. Campbell's argumentative scientism. But he emulates these in his own more literate and more formally daring fashion; his stylistic control and sentimental humanism placed him on a different plane very early on. He's remained there ever since, one of sf's most distinguished pulp philosophers. And NESFA Press has at last assembled his most distinctive fictional pronouncements.

An Ornament to His Profession contains 17 stories, expressions in miniature of the motifs and techniques that make Harness's novels so dazzling. There is the central knot of absolute heterosexual love, often patterned on myth; the lady is inclined to be titled or just plain rich. This is embroidered about with logical preoccupations: melodramatic court cases, which draw on Harness's copious legal experience, and elaborate chess problems. These are the strategic matrix within which

the plot develops: the contending sides or players represent opposed principles of love and hatred, or freedom and control, battling each other across the cosmic arena. The solution to the conflict is usually radically cyclical,

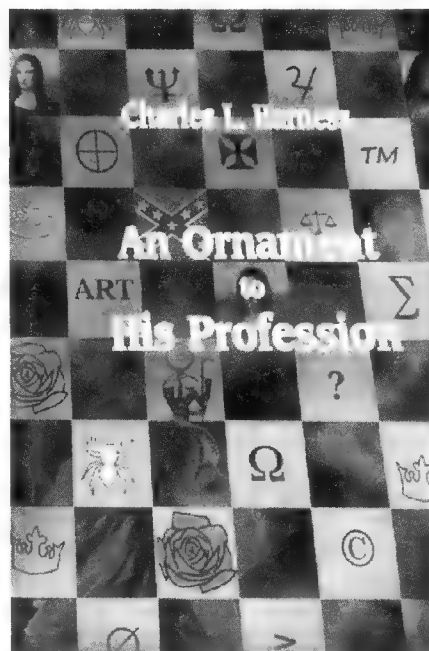
The Rings and the Books

Nick Gevers

involving variations on the eternal return, journeys back through time and space to the beginning of it all, where the universal pain can be assuaged, or eliminated altogether. There is an obvious ultimate wish-fulfilment in all this, of course, stemming perhaps from a pattern of loss and regret in Harness own life, its key element the early death of an idolized brother; but space opera has rarely had so invigorating an impulse.

Early tales such as "Stalemate in Space," "Time Trap" and "The New Reality" are prescient of the huge mythic architectures Harness was later to erect, and the seminal novella, "The Rose," sets out in sophisticated measure the adversarial relationship of art and science, reifying types with a bold allegorist's hand. With the addition of many later stories, *An Ornament* is a superb collection. But *Rings* is the core of the enterprise. It gathers four novels, representative of all the stages of Harness's career and linked by their common fascination with the mythic power of the cycle, the redemptive pilgrimage to points of origin. Their resemblances and contrasts afford an unusual opportunity to see how a resonant theme is developed by an author over half a century; and they are Harness's most memorable works in the bargain.

The first novel, *The Paradox Men* (1953), was one of the first genre sf novels with some authentic claim to greatness, a book with a mesmeric grip that transcends any limitations of style or obsolescence. It takes the form of a baroque adventure novel, in which a mysterious superhuman stranger, in (reciprocated) love with the wife of the chancellor of a brutal feudalized American Empire, challenges that Empire in a succession of bravura, chess-sequential episodes. The stakes are not simply liberty, but the survival of the human race; and the intensity of each episode mirrors this concern. Typical of this novel's feverish concept-profligate atmosphere is the contest between the hero, Alar the Thief, and an evil Imperial doctor; the latter is driven claustrophobically mad by a series of psychiatric tricks and arguments aboard a solarion, a platform floating precariously on the surface of the Sun. Alar takes piece after piece, but in the



end, in one of sf's most impressive conclusions, the chessboard must be fundamentally redrawn.

The Ring of Ritornel (1968) is not quite as impressive as its predecessor, but is commanding enough. Here Harness considers the possible cosmological and existential implications of the steady-state theory of cosmic development. Opposed motifs of random chance and conscious design conflict against a backdrop of characteristic extravagance: not content with the standard Galactic Empire, Harness delineates twelve linked galactic domains; in especially striking passages, Terra, known pejoratively as Terror by its enemies, is sentenced to be destroyed, an occasion for bizarre legal casuistry and pontification. The chapter numbers and headings progress normally for half the novel, only to reverse themselves, a formalization of yet another of Harness's recursive schemes.

The Paradox Men and *The Ring of Ritornel* were the major products of Harness's interrupted prime; in his retirement, he has at times sought to repeat their prodigies of scale and movement. *Firebird* (1981) is a strikingly ambitious novel: it transfers the material of Wagner's *Tristan und Isolde* to a previous oscillation of the universe, where sentient felines dominate space and are in their turn dominated by Control, a bipolar cosmic computer which has usurped the role of God, annihilating any freedom of will but its own. Harness ingeniously associates that free will with the necessity of the universe's continued oscillation; Control prefers heat death, which will permit its ultimate immortality. The battle to tip the continuum one way or the other – on Control's side to subtract from its mass, on the Tristan figure's side to add to it by manipulation of relativity – rests on deeply hokey physics, but symbolically has immense power. The book's unevenness – its scanting of detail in its description of a great transgalactic pursuit stands out – is at times worrying, but its majesty is essentially intact.

This majestic originality continues in Harness's most recent novel, "Drunkard's Endgame," which is original to *Rings*. Wagner is again not far distant, as the circumstances of the Götterdämmerung are repeated in Asimovian form. Here the plot's cyclical movement is in space only: a huge spaceship usurped from its human owners by intelligent robots a thousand years before has travelled, like a drunkard, in circles, and its teeming metallic crew must come to terms with the fate of the Earth and with their need for some proper purpose of their own, out of humanity's shadow. Again, dictatorship threatens; again, there is a sense that a new start must be

made, if necessary by means of a return to the start of all things. The robot society is skilfully drawn, its members vividly characterized; the steps of a chess game and the motions of court procedure are deployed with Harness's usual élan. What disfigures "Drunkard's Endgame," despite the tale's overall likeability, is the curious nihilism of its conclusion, which suggests that one great crime should be prevented by means of an even greater

one. Perhaps Harness, in the heat of his ingenious plotting, lost sight of the humanity of the androids he was depicting; the effect is mildly disappointing.

But all in all, *Rings* is a superb volume, a systematic masterclass in clever narrative design and the rendition of universal catharsis. It can only be very highly recommended.

Nick Gevers



Deus Ex Machina

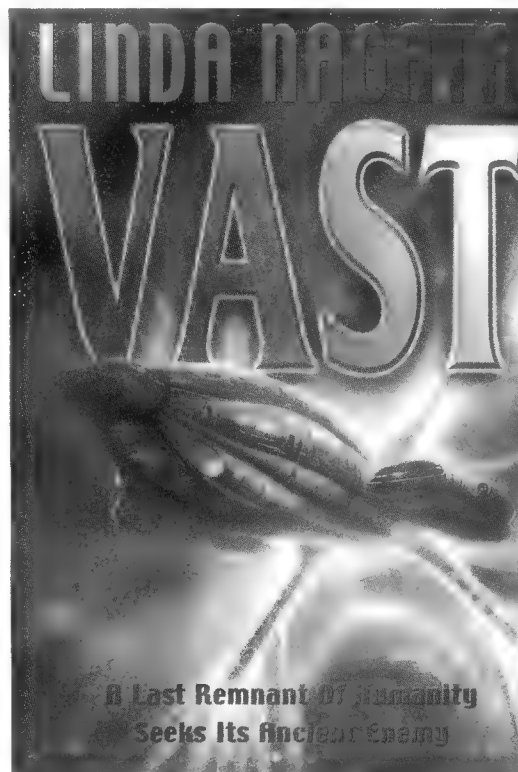
Chris Gilmore

Back in the 1960s Fred Saberhagen produced his first *Berserker* stories, in which a fleet of robot-controlled spaceships rampages through the galaxy intent on destroying all life therein – the legacy of an extinct race of paranoid imperialists. They were undemanding entertainment, but they were hard sf of their time. Now Linda Nagata has adopted the idea for *Vast* (Gollancz, £16.99), in the more demanding current style of hard sf.

The plot is simple in outline: a Chenzeme "courser" (= Berserker) is

pursuing the human-operated *Null Boundary*, with presumed murderous intent. Can it get away? If so, can it destroy its pursuer or (better still) filch from it the secret of zero-point energy devices, which coursers are known to deploy, but which humans are so far unable to build? A stern chase is a long chase, and this one takes centuries – which the crew devote to speculation about the nature of their enemy, and to sex and reproduction – activities which, unsurprisingly, are entirely disconnected.

Given her self-imposed limits of cast and milieu, Nagata sustains the suspense remarkably well, but some difficulties arise from her decision to deploy the most extreme extensions of all the latest hard sf tropes, particularly those relating to artificial intelligence, nanotech and downloading. Of the four "people" originally aboard the ship, one prefers to spend most of his time as an AI, and when incarnate, adopts a body with notably reptilian features; he and two of the others frequently despatch "ghost" copies of themselves to perform some mundane task while the "original" gets on with something else, the ghost downloading its experience into the original once the task is over. That leaves you with two or more sets of memories to cover the same time-period, which is rather less unsettling than finding that your lover has memories of your life together which you don't share – either because at some time or other you (or someone)



edited them out, or because they were shared with a version of yourself that never got back together with you (though one or other of her did).

A side effect is that if someone gets killed, it's really no big deal; you just build another body and reincarnate his most recent ghost. That means the third crew member is seriously disadvantaged; not only is he infected with a virus which gives rise to an especially destructive form of religious mania, he is congenitally unable to generate ghosts; but by way of compensation he has a strong affinity with the Chenzeme "philosopher cells" (nanocomputers), with which they hope *Null Boundary* will be able to fool the courser into taking it for a sister ship.

When Nagata feels the need for a fifth character, incidentally, there's no problem. While looking for something else, someone discovers a complete human personality hidden among some corrupted computer files. Quick as a flash they build an adult body and download her into it, which some might regard as a doubtful favour, given their hazardous situation, but which she takes very well. I can't really object to this in the circumstances, but I hope it doesn't catch on – it would give an entirely new and deeply unwelcome meaning to the phrase *deus ex machina*.

This, then, is a highly intellectual romp, well worth reading for the ideas, though it must be said that Nagata can offer neither the limpidity of Greg Egan nor the poignant emotional intensity which Poul Anderson has brought to similar contexts. Nor is all her ornamentation well chosen. I'm unconvinced by her assumption that "fury" could become a term of non-specific endearment, ranging in meaning from "darling" to "old chap." Nor is the mild oath "Love and nature!" any substitute for the more familiar "Hell and damnation!" Finally, and worst, the star Alpha Cygni plays a prominent part in the first half of the book, and the lady resurrected from the data banks bears the unusual name of Deneb – aka Alpha Cygni. A joke with

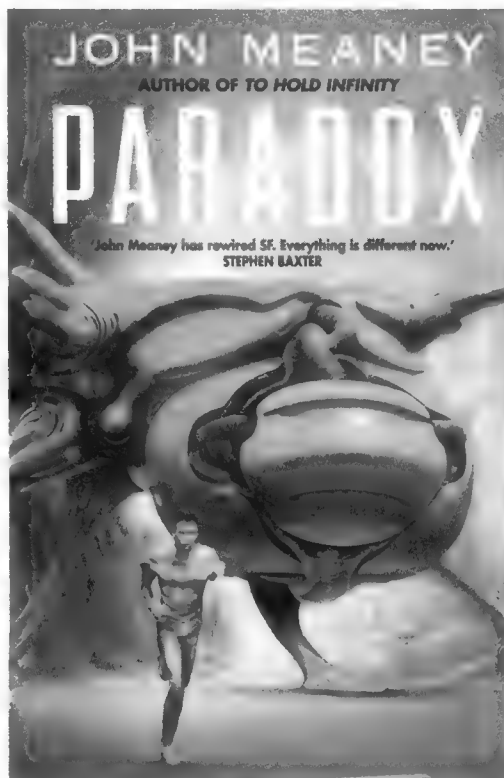


Photo: Paul Brazier

John Meaney, author of *Paradox*, with his wife Barbara

no point whatever, and an irritation which her editor should have blue-pencilled.

Incidentally, though the publisher doesn't mention it, on internal evidence I think this book must be a sequel to Nagata's earlier *Deception*



reflected that the miraculous was an aspect which modern religiosity plays down. Should I choose to attack the faith of an intellectual Papist, I would not begin by demanding that he justify the excesses of Lourdes; while if miracles ever regain their vogue, Marxism (should it survive that long) will doubtless discover a canon of its own.

Sylvie Germain's religious fantasies are, therefore, outside the mainstream of both religion and fantasy, because they assume the miraculous as a *donné*, and are all about the human reaction thereto. *The Book of Tobias* (Dedalus, £7.99, B-format) is presented as a re-telling of the journey of Tobias and the Angel Raphael, as recounted in the Book of Tobit (rather unsportingly consigned by the Church of England to the Apocrypha), though in fact the journey doesn't begin until it's more than half over, the earlier chapters being devoted to the stories of women, old and young, who experience ill luck in such persistent, consistent and freakish forms that one could reasonably assume that each lay under a curse.

To object that such stories have little relevance to life as actually lived – one doesn't believe in curses any more than one believes in blessings – would be, I think, to underestimate Germain. For we live in a crowded world, and among six billion people even the

Well, which I haven't seen. I might have got more out of *Vast* if I'd read that first – or I might not.

It's a 20th-century cliché that Marxism is but the last of the four great Semitic religions; one points to its millenarianism, its martyrology, its holy (class) warfare, its sense of manifest destiny, its body of non-falsifiable prophecy. Yet a militant Marxist atheist to whom I once heard this propounded indignantly denied the charge. It rejected the religious *sine qua non*: Marxism specifically denied that there was, or could be, any intrusion of the miraculous into the daily lives of mankind. This undeniable observation silenced his critics, including myself. Subsequently applying *l'esprit d'escalier*, I

most etiolated tails of the normal distribution curve must be realized now and again in the life of some uniquely wretched (or favoured) person. By invoking the miraculous and the numinous, Germain presents those who cannot bear to inhabit a random universe with a means of coming to terms with the problem of the manifest and meaningless unjustness of life. To think on such lines draws one ineluctably into the embrace of Quietism, a philosophy to which I imagine few of you are attracted, and which I myself reject; nevertheless, Germain presents the case for it with passion and ingenuity, in a text which teems with intensely visual imagery.

In this connection her language occasionally lapses into preciosity. The crescent moon becomes at one point "an eyelash dazzled by the plenitude of a thought, but fallen from what eyelid?" I suspect it worked better in the original, for all that I suspect the phrase "translucid light" read just as badly. But Christine Donougher cannot have found it an easy text to translate, and she has made a much better job than she did of Marcel Béalu's *The Experience of Night* (reviewed in *Interzone* 121). This book offers a rewarding insight into a bizarre philosophical mindset, and would be worth reading for that alone.

The publicity material accompanying John Meaney's *Paradox* (Bantam, £16.99) describes him as "the new Iain M. Banks," a class of hype for which I have scant regard: we haven't used up the current model, so a new one now would seem superfluous. On the other hand... In *The Player of Games*, Banks introduced a society which was described as operating very efficiently, yet was so arranged that the top working bureaucrats were permanently enslaved to an endless round of brutal and debilitating debauchery. Meaney makes a similar error, for the pivotal incident in his book goes as follows.

A party of boys from a "Ragged School" is visiting a shop used by the highest classes. Suddenly, one of them grabs an expensive jacket, and makes off with it. He shoves it into the hands of Tom, our unsuspecting hero, and disappears into the throng. Tom is therefore arrested for theft, found guilty on purely circumstantial evidence, and condemned to death – a sentence commuted to serfdom plus loss of an arm. Gee! Heavy stuff. Also quite ludicrous. I'm willing to accept both a draconian criminal tariff and the presumption that the lives of lower-class boys are as nought to the nobility. I'd also buy police complicity in a stitch-up, were that in the plot – but it's not. Instead we have an hys-

terical bias towards property, but no one willing to make the least effort to determine who is guilty of theft – by, for instance, a little desultory questioning of the many witnesses.

This is what James Blish referred to as "idiot-plotting," and the more to be regretted because Meaney is not untalented as a writer. His tale is set on Nulapeiron, a world of arcologies where, as is apt to happen with arcologies, the high live high and the lowly live low, in both senses. So far, so conventional; Meaney's twist on this commonplace setup is that the élite are obsessed with logical conundra and paradoxes of all kinds, from which it follows that if you happen to be a bright, one-armed serving-boy in a great household, competence in that area will get you noticed – especially by the highly sexed, terminally bored women of all ages with which such households notoriously abound.

Not that there's much sex in *Paradox*; Tom is too busy elevating himself to the minor aristocracy by pure brains and sheer grit. Having got there, of course, he sets about social reform, which rapidly degenerates into bloody revolution, whereupon he cracks up. Having drifted to the bottom of the heap, he finds fulfilment as a teacher in the decent, orderly society which exists down there, immune from the vice, spice, violence and squalor elsewhere. Eh? How? Sorry, Meaney never explains – and that's the book's principal weakness. There's a great deal of jargon from as yet uninvented sciences, but the society has no rationale.

For instance, in a sophisticated, densely populated urban milieu one would expect homosexuality to be tolerated, even applauded; here we're told it's condemned and heavily punished, but not how this anomaly has come about – nor has it any bearing on the plot. Consequently, although Tom's adventures are described with some verve, they come to look increasingly like a series of poses struck before a random array of stage-sets, an impression reinforced by the fact that he's the only character of substance, all the rest being dramatic foils. A pity; Meaney has the talent to succeed at something less ambitious, but *Paradox* does not quite sustain its pretensions.

As a believer in themed, chronologically arranged anthologies, I have a natural bias in favour of *Explorers* edited by Gardner Dozois (St Martin's, \$17.95). It's a collection of 23 longish shorts about space exploration, running from 1951 (Clarke's rather over-familiar "The Sentinel") to 1998 (Geoffrey A. Landis's "Approaching Perimelasma"). Gardner Dozois has been at some pains to present variety, but it's interesting to note that as we near the present, the explorers get less and less human. The first cyborg appears in 1965 (Larry Niven's "Becalmed in Hell"), the one robot in 1972 (Vernor Vinge's "Long Shot") but two of the last three feature downloaded personalities (of these, Greg Egan's "Wang's Carpets" is also rather over-familiar, but it's a great story, and some reader may have missed it). I wonder how well they'll wear once that becomes practicable.

Of the older stories, the very best is Poul Anderson's "The Longest Voyage," which conveys in a very downbeat fashion a similar message to his upbeat and better-known "Turning Point"; H. B. Fyfe's "Moonwalk" is very much an exercise in suspense-writing – very well done, but a contextless exercise, even so; James H. Schmitz's "Grandpa" really belongs in a juvenile collection; and Edgar Pangborn's "The Red Hills of Summer" is the only real lemon. It's arch, slapdash and didactic all at once, and Dozois almost (not quite) apologizes for it. He should have left it out and included a couple by Sheckley instead. Exploration stories were Sheckley's speciality, and the best of them have stood the test of time as well as anything here – including R. A. Lafferty's "Nine Hundred Grandmothers" (my favourite shaggy dog story) and Roger Zelazny's beautiful and moving "The Keys to December." But you can't please everyone all the time, least of all me, and overall this anthology is excellent value.

Chris Gilmore



In our ghetto Jeff Noon is known for his novels. His first, *Vurt*, won the Arthur C. Clarke award in 1994 and established him as something of a star. However Noon had already won the Mobil Prize for his drama *Woundings* which was performed at Manchester's Royal Exchange Theatre in 1986. The Liam Steel-directed and Noon-scripted *Vurt: The Theatre Remix* could be seen as a return to his writing roots rather than exploitation of earlier success.

Appropriately *Vurt* returned as theatre at the newly rebuilt Contact (Young People's) in Manchester. Noon studied drama at Manchester University, where the Contact is located, and set *Vurt*, in both its incarnations, in the less celebrated parts of the city.

"Vurt" is a consensual hallucination entered by those who share the feather, usually by sucking it. Different colour feathers indicate the differing levels/degrees/states of the Vurt to which they grant entry. Rare colours lead to strange and dangerous places. The Vurt seems to have some degree of reality in the sense that the feathers may originate there; it has its own denizens and its visitors don't always return. In the latter case a Vurt creature replaces the "real" body. As much of the action occurs in the Vurt, this is not an easy tale to portray in theatre.

As a novel, and play, *Vurt* has echoes of: Russell Hoban; dog-people or their equivalent, Kubrick/Burgess; an initially confusing language which becomes steadily clearer to the audience; and Philip K. Dick; dreams within dreams within... until you are not sure what is real. The play retains all this, using sound effects and light to help signify transitions. As the title suggests lighting, music, poetry and choreographed movement are included in the mix, often rather effectively.

We open with a tableau in a darkened smoke-filled space. People are lying in a stupor in the centre of an otherwise bare set. They represent the corporeal forms of a group enjoying some sort of orgy in the Vurt. Some of them return to a decrepit apartment in the city. There we meet Beetle (Anthony Barclay), Scribble (Fraser Ayres), Bridget (Julie Riley) and Mandy (Rina Mahoney). We soon learn that Scrib-

A Tickle in Manchester's Throat

Roy Gray



ble has lost his sister to the Vurt, gaining an alien in return, and wants to get her back; Mandy is replacing Bridget in Beetle's affections; both women have eyes for Scribble but Desdemona was "more than a sister" to him. So our plot is in motion and most of the main characters in play.

Danny John-Jules (*Red Dwarf*), as the Gamecat, is the kind of narrator figure who sows almost as much confusion as understanding. Despite some doubling up there is a total cast of 20, including twelve in the ensemble, and their acting reaches a high standard.

The play lasts nearly two and a half hours and is split by an interval. The action, sets and plot work together, building a powerful first half. During the interval that energy is dissipated and the whole never quite achieves its promise. The story had to be truncated, compared with the novel, to finish in reasonable time and the difficulty of portraying the original ending theatrically left few choices. Nevertheless there are some exceptional scenes, including a rather Dickensian moment when Scribble revisits the dream in which he lost Desdemona.

It seems horrible, but the child abuse-driven character has become a something of a cliché in the seven years since *Vurt* was published. Today even incest is, I believe, the stuff of soap opera. Perhaps this change in society saps the energy of the second half. It doesn't help that Scribble is mostly a reactive, rather than proactive, character and Bridget and Beetle are off stage most of the second half.

In addition the play loses some of the book's intimacy with Manchester. A rolling projection of the A-to-Z of Manchester onto the stage is one method used to retain this connection but the sparse sets really mean it could have been placed anywhere. Noon has relocated to *Interzone* country, Brighton, and considers his latest novel, *Needle in the Groove*, a farewell to Manchester. Maybe, subconsciously, "The Theatre Remix" is his emergence from the Vurt.

I don't want to be overly damning. We enjoyed the evening and the time did not drag. This is a play where you should make up your own mind – but, alas, its run at the Contact Theatre was due to end on 17th June 2000, before this review will see print.

Roy Gray

interzone

The following is a list of all sf, fantasy and horror titles, and books of related interest, received by Interzone during the month specified. Official publication dates, where known, are given in *italics* at the end of each entry. Descriptive phrases in quotes following titles are taken from book covers rather than title pages. A listing here does not preclude a separate review in this issue (or in a future issue) of the magazine.

Barnes, John. **Apocalypses and Apostrophes**. Millennium, ISBN 1-85798-855-8, 349pp, A-format paperback, cover by John Harris, £6.99. (Sf collection, first published in the USA as *Apostrophes and Apocalypses* [note the title reversal], 1998; Barnes's first gathering of shorter work, it contains 20-odd pieces, fiction and non-fiction, some of them previously unpublished; reviewed by Chris Gilmore in *Interzone* 141.) 13th April 2000.

Bishop, Michael. **No Enemy But Time**. "Gollancz SF Collectors' Editions." Gollancz, ISBN 0-575-07096-X, 397pp, C-format paperback, £10.99. (Sf novel, first published in the USA, 1982; an interesting Nebula Award-winner of time-travel and prehistory; this is one of the first of a series of yellow-jacketed trade-paperback reissues from Orion/Gollancz [see also under Clement, Russell and Silverberg, below]; each has a fairly heavy card cover, with flaps, and is designed to resemble the non-pictorial yellow-covered Gollancz sf hardbacks of old [i.e. of the period from the 1960s to the 1980s]; as a complement to the ongoing Millennium "SF Masterworks" series, this is a good idea, but as an approach which is presumably intended to appeal in part to the nostalgia market it may be of more dubious value – today's young readers are unlikely to feel any great affection for yellow covers *per se*; nevertheless, these are all worthwhile books, and we wish the series the best of luck.) 20th April 2000.

Bradbury, Ray. **Long After Midnight**. Earthlight, ISBN 0-671-03769-2, 275pp, A-format paperback, cover by Trevor Scobie, £5.99. (Sf/horror/fantasy collection, first published in the USA, 1976; first Simon & Schuster/Earthlight printing [it was previously a Granada/Grafton Books paperback in the UK]; Bradbury turns 80 on 22nd August this year.) 15th May 2000.

Clark, Simon. **Judas Tree**. New English Library, ISBN 0-340-73914-2, 423pp, A-format paperback, cover by Chris Moore, £6.99. (Horror novel, first published in 1999; the hardcover was described as being "in the classic tradition of *The Haunting of Hill House*, *Rebecca* and *The Shining*.") 25th May 2000.

Clement, Hal. **Mission of Gravity**. "Gollancz SF Collectors' Editions." Gollancz,

ISBN 0-575-07094-3, 203pp, C-format paperback, £9.99. (Sf novel, first published in the USA, 1954; the book which established "hard sf" as a sub-category of the genre; Thomas M. Disch is quoted on the front cover, describing it as "The best account of alien life on another planet.") 20th April 2000.

Dozois, Gardner, ed. **The Year's Best Science Fiction: Seventeenth Annual Collection**. St Martin's Griffin, ISBN 0-312-26417-8, 625pp, trade paperback, \$17.95. (Sf anthology, first edition; proof copy received; there will be a simultaneous hardcover edition priced at \$29.95; this incomplete proof does not contain the introduction and year's summation, which normally comprise more than 50 Roman-numeralled pages; it contains stories by Eleanor Aranasan, Kage Baker, Stephen Baxter, Ben Bova, Hal Clement, M. John Harrison, James Patrick Kelly, Paul J. McAuley, David Marusek, Frederik Pohl, Robert Reed, Kim Stanley Robinson, Karl Schroeder, Charles Sheffield, Robert Silverberg, Michael Swanwick, Sage Walker, Sean Williams, Walter Jon Williams and several others; four of the stories are from *Interzone* – Alastair Reynolds's "Galactic North," Greg Egan's "Border Guards," Tanith Lee's "The Sky-Green Blues" and Geoff Ryman's "Everywhere"; we recommend it, as usual; reviewed by Tom Arden in this issue of *Interzone*.) July 2000.

Eddison, E. R. **The Worm Ouroboros**. "Fantasy Masterworks, 3." Millennium, ISBN 1-85798-993-7, 520pp, B-format paperback, cover by Sir Edward Burne-Jones, £6.99. (Fantasy novel, first published in the UK, 1922; along with William Mor-

BOOKS RECEIVED



APRIL
2000

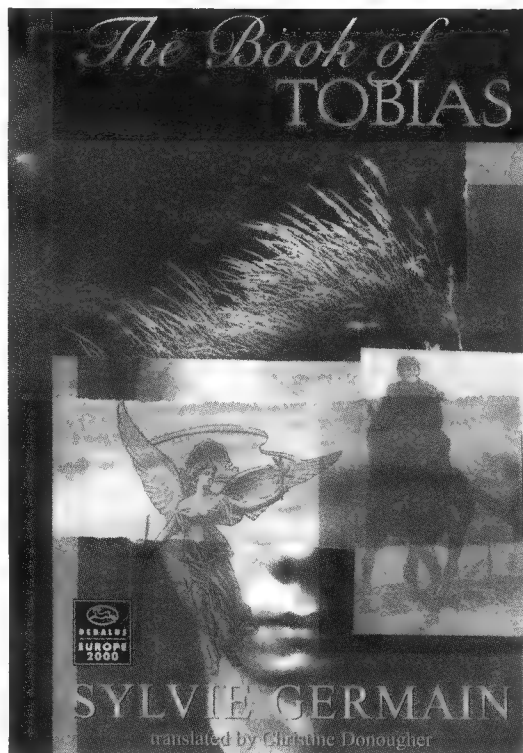
ris's late romances, the early tales of Lord Dunsany, and a few others, this is one of the founding texts of modern fantasy fiction; as with the Dunsany volume listed last month, it's good to see it in a handsome new paperback edition.) 13th April 2000.

Forward, Eve. **Animist**. Tor, ISBN 0-312-86891-X, 336pp, hardcover, \$23.95. (Fantasy novel, first edition; proof copy received; the beginning of a new fantasy trilogy by the daughter of hard-sf writer Robert L. Forward.) June 2000.

Forward, Robert L. **Dragon's Egg**. "Books that made the future." Del Rey/Impact, ISBN 0-345-43529-X, 345pp, trade paperback, \$12. (Sf novel, first published in the USA, 1980; like Clement's *Mission of Gravity* [see above], this has the reputation of being quintessential hard sf; there is a 25-page "Technical Appendix.") Late entry: 1st March publication, received in April 2000.

Germain, Sylvie. **The Book of Tobias**. Translated by Christine Donougher. Dedalus, ISBN 1-873982-39-9, 196pp, B-format paperback, cover by Lise Weisgerber, £7.99. (Literary fantasy novel, first published in France, 1999; this is the first edition in English; reviewed by Chris Gilmore in this issue of *Interzone*.) 4th May 2000.

Goodkind, Terry. **Soul of the Fire**. Millennium, ISBN 1-85798-854-X, 643pp, A-format paperback, cover by Keith Parkinson, £6.99. (Fantasy novel, first published in the USA, 1999; this is Book Five of "The Sword of Truth," although





for some reason it does not state as much on the front cover or title page.) 13th April 2000.

Hambly, Barbara. **Knight of the Demon Queen.** Voyager, ISBN 0-00-648373-9, 263pp, A-format paperback, cover by Les Edwards, £5.99. (Fantasy novel, first published in the USA, 2000; a follow-up to *Dragonsbane* and *Dragonshadow*.) 2nd May 2000.

Harlan, Thomas. **The Gate of Fire: Book Two of The Oath of Empire.** Tor, ISBN 0-312-86544-9, 477pp, hardcover, cover by Stephen Hickman, \$27.95. (Fantasy novel, first edition; we don't recall seeing [or hearing of] the first volume in this trilogy, which was entitled *The Shadow of Ararat* [1999]; although Big Commercial Fantasy, with magic, it's set in a quasi-science-fictional alternative timeline where Rome did not fall; the author is a former games-designer.) 22nd May 2000.

Harris, John. **Mass: The Art of John Harris.** Text by Ron Tiner. Paper Tiger, ISBN 1-85585-831-2, 112pp, large-format hardcover, cover by Harris, £20. (Sf/fantasy art portfolio; first edition; Harris [born 1948] seems to be a specialist in huge knobbly spaceships, although he also does a good line in fantasy landscapes.) 20th April 2000.

Ings, Simon. **Painkillers.** "A lethal, pacy thriller." Bloomsbury, ISBN 0-7475-4787-4, 249pp, trade paperback, £9.99. (Sf thriller, first edition; a change of publisher for Ings [formerly with HarperCollins] and a change of presentation – this one is aimed at the mainstream market; it's good to see Bloomsbury [a publisher from whom we hear all too little] beginning to plough some of their vast Harry Potter profits back into encouraging British sf and fantasy.) 11th May 2000.

Irvine, Ian. **A Shadow on the Glass: Volume One of The View from the Mirror Quartet.** Orbit, ISBN 1-84149-003-2, xiii+586pp, A-format paperback, cover by Mark Sofilas, £6.99. (Fantasy novel, first published in Australia, 1998; the author was born in Australia in 1950, and – so far as we know – this is his first appearance in Britain.) 10th May 2000.

Lawson, Philip. **Muskrat Courage.** "A novel of suspense." St Martin's Minotaur, ISBN 0-312-26207-8, 277pp, hardcover, \$23.95. (Mystery novel, first edition; proof copy received; the author "occupies homes in Pine Mountain, Georgia, and Providence, Rhode Island, using a different alias in each place," according to the note at the rear – which is a clue to the fact that this is a collaborative novel [their second] by two of *Interzone*'s well-known American contribu-

tors, Michael Bishop and Paul Di Filippo.) June 2000.

McCaffrey, Anne. **The Tower and the Hive.** Corgi, ISBN 0-552-14629-3, 396pp, A-format paperback, cover by Duane O. Myers, £5.99. (Sf novel, first published in the USA [?], 1999; fifth and last volume in the "Damia" series [now officially called the "Tower and the Hive" series] – *The Rowan* [1990], *Damia* [1991], *Damia's Children* [1992] and *Lyon's Pride* [1994].) 11th May 2000.

McCormack, Patrick. **Albion: The White Phantom.** Robinson, ISBN 1-84119-051-9, viii+454pp, B-format paperback, £7.99. (Arthurian fantasy novel, first edition; proof copy received; sequel to *Albion: The Last Companion* [1997]; it's by a fairly new British writer who works as a second-hand bookseller in Devon; Robinson Publishing has merged with Constable, so the name "Robinson" is now "an imprint of Constable & Robinson Ltd.") 25th May 2000.

Matheson, Richard. **A Stir of Echoes.** "The novel that inspired the thrilling new movie starring Kevin Bacon." Boxtree, ISBN 0-7522-7194-6, 211pp, A-format paperback, £5.99. (Sf/horror novel, first published in the USA, 1958; a bit of an old warhorse, this.) 19th May 2000.

Mór, Caiseal. **The Circle and the Cross: Book One of The Wanderers.** Earthlight, ISBN 0-671-03728-5, 536pp, A-format paperback, cover by the author, £6.99. (Fantasy novel, first published in Australia,

1995; befitting the author's Irish name, it's Celtic, Druidic stuff; the concluding volumes of the trilogy, *The Song of the Earth* and *The Water of Life*, both already published in Down Under; are scheduled for Earthlight editions later this year; apparently the author has sold over 100,000 books in his native Australia.) 15th May 2000.

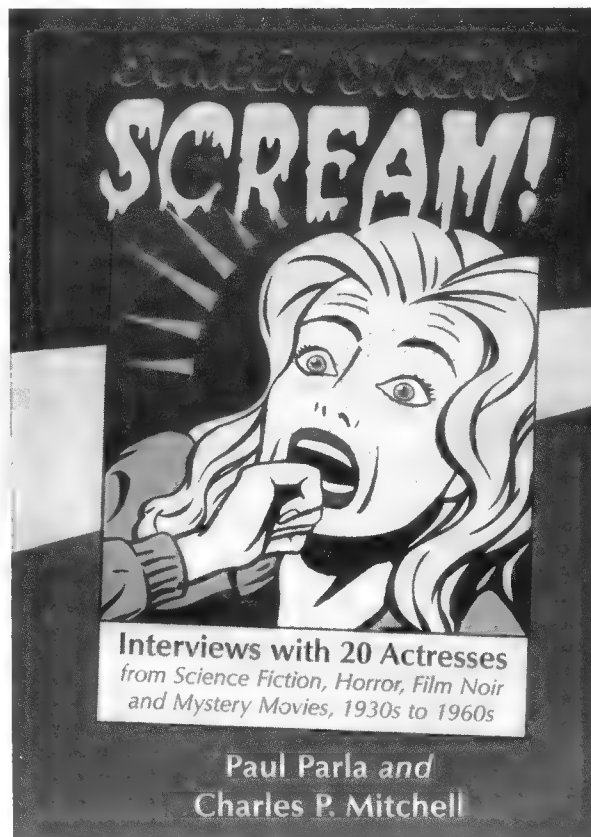
Newman, Kim. **Seven Stars.** Foreword by Stephen Jones. Pocket, ISBN 0-671-77338-0, 386pp, B-format paperback, cover by Ian Miller, £6.99. (Sf/horror/fantasy collection, first edition; Newman's first new collection in several years, and his third overall [following *The Original Dr Shade* (1994) and *Famous Monsters* (1995)], it contains five reprinted stories [one of which, "Angel Down, Sussex," appeared in *Interzone* last year] and a novella, "Seven Stars"; there's also a six-page "Who's Who" which provides notes on the author's interweaving cast of characters; a delight for those who relish Newman's "blend of pulp, satire, terror and romance" [as the blurb puts it].) 8th May 2000.

Nichols, Adam. **The Songster.** "The Whiteblade Saga, Book Two." Millennium, ISBN 1-85798-572-9, 488pp, A-format paperback, £6.99. (Fantasy novel, first published in 1999; in the accompanying publicity letter, the author is described as "a rogue academic who lives and breathes fantasy; born in Camberwell, London, he relocated to Canada when his family emigrated.") 13th April 2000.

Niven, Larry, and Steven Barnes. **Saturn's Race.** Tor, ISBN 0-312-86726-3, 317pp, hardcover, \$24.95. (Sf novel, first edition; proof copy received; it appears to be near-future utopian; two new Niven collaborations appearing near simultaneously! – see below.) May 2000.

Niven, Larry, and Jerry Pournelle. **The Burning City.** Orbit, ISBN 1-84149-006-7, xxi+486pp, hardcover, cover by David Wyatt, £17.99. (Sf/fantasy novel, first published in the USA, 2000; this is packaged as Big Commercial Fantasy, but it's probably sf disguised as fantasy – "California sf," by the looks of it; have those two famous hardnuts, Niven & Pournelle, gone all environmentalist on us?) 27th April 2000.

Noon, Jeff. **Needle in the Groove.** Anchor, ISBN 1-862-30091-7, 287pp, large squarish paperback (B-format equivalent), £9.99. ("Slipstream" novel, first edition [or is it? – it states "Copyright (c) 1999" inside, but there's nothing to indicate that it's a reprint]; this appears to be a Manchester-based rock-music novel which may or may not have some fantastic



content; it's freaky, and by the one and only Jeff Noon, but it's less science-fictional than all his earlier books; the publishers bill it as "Noon's farewell to Manchester novel... He now lives in Brighton.") 11th May 2000.

Noon, Jeff. **Pixel Juice: Stories from the Avant Pulp.** Anchor, ISBN 1-862-30088-7, 350pp, small squarish paperback (A-format equivalent), £6.99. (Sf/fantasy collection, first published in 1998; it contains 50 short pieces, only half a dozen of which have been published before [in papers such as *The Big Issue* and *The Guardian*]; as we said of the hardcover, the publishers seem at a loss for an adequate descriptive: "Call it Slipstream, call it Avant Pulp, call it Transfiction, Kaleidopunk, Techno-Whimsy or Genre Melt..."; whatever, it's brilliant, poetic, sparky stuff by Britain's very own Northern-bred equivalent of the late William S. Burroughs.) 11th May 2000.

Parla, Paul, and Charles P. Mitchell. **Screen Sirens Scream!: Interviews with 20 Actresses from Science Fiction, Horror, Film Noir and Mystery Movies, 1930s to 1950s.** McFarland [Box 611, Jefferson, NC 28640, USA], ISBN 0-7864-0701-8, viii+248pp, hardcover, \$36.50. (Illustrated collection of movie interviews; first edition; sterling-priced import copies are available in Britain on 20th July 2000 from Shelwing Ltd, 127 Sandgate Rd., Folkestone, Kent CT20 2BH, at £27.40; the names of the interviewees are obscure – Faith Domergue, of *This Island Earth* fame, is just about the best known to us – but no doubt will be familiar to connoisseurs of old B-movies; another well-produced volume from McFarland, in their larger format with illustrated cover.) May 2000.

Pohl, Frederik. **Man Plus.** "SF Masterworks, 29." Millennium, ISBN 1-85798-946-5, 215pp, B-format paperback, cover by Chris Moore, £6.99. (Sf novel, first published in the USA, 1976; some of us always liked this novel better than Pohl's more highly-touted *Gateway* [1977] – mainly because of the potency of the central theme of cyborgization.) May [?] 2000.

Russell, Eric Frank. **Wasp.** "Gollancz SF Collectors' Editions." Gollancz, ISBN 0-575-07095-1, 175pp, C-format paperback, £9.99. (Sf novel, first published in the USA, 1957; a very minor humorous sf classic of yesteryear by a now-neglected British writer; Terry Pratchett is quoted on the front cover: "I'd have given anything to have written *Wasp*.") 20th April 2000.

Sarrantonio, Al, ed. **999: New Stories of Horror and Suspense.** New English Library, ISBN 0-340-74860-5, xix+828pp, A-format paperback,

£7.99. (Horror anthology, first published in the USA, 1999; a whopping Millennial volume of all-original stories by William Peter Blatty, Edward Bryant, P. D. Cacek, Ramsey Campbell, Nancy A. Collins, Thomas M. Disch, Neil Gaiman, Ed Gorman, Rick Hautala, Stephen King, T. E. D. Klein, Joe R. Lansdale, Thomas Ligotti, Bentley Little, Thomas F. Monteleone, David Morrell, Kim Newman, Joyce Carol Oates, Michael Marshall Smith, Tim Powers, Eric Van Lustbader, F. Paul Wilson, Gene Wolfe and others; reviewed by David Mathew in *Interzone* 153.) 18th May 2000.

Schweitzer, Darrell. **Nightsapes: Tales of the Ominous and Magical.** Illustrated by Jason Van Hollander. Wildside Press [PO Box 45, Gillette, NJ 07933-0045, USA], ISBN 1-58715-061-1, 220pp, trade paperback, cover by Van Hollander, \$17.50. (Horror/fantasy collection; first edition; there is a simultaneous hardcover edition [not seen], priced at \$35; it contains 17 stories, the first of which ["A Servant of Satan"] is reprinted from *Interzone* 136 [October 1998], while the others come from Marion Zimmer Bradley's *Fantasy Magazine*, *Cemetery Dance*, *Weirdbook* and other U.S. magazines, plus various original anthologies; this is one of a number of Darrell Schweitzer titles that are being published by Wildside Press, a "print on demand" publishing house which produces attractive books; see website at www.wildsidepress.com.)

sidepress.com.) No date shown: received in April 2000.

Shetterly, Will. **Chimera.** Tor, ISBN 0-312-86630-5, 285pp, hardcover, \$23.95. (Sf novel, first edition; proof copy received; a "tale of gene-splicing and artificial intelligence" by an author hitherto best-known for his fantasy novels.) June 2000.

Silverberg, Robert. **Majipoor Chronicles.** Voyager, ISBN 0-00-648379-8, 385pp, A-format paperback, cover by Jim Burns, £5.99. (Sf/fantasy collection of linked stories, first published in the USA, 1982; first Voyager printing [it was previously a Pan paperback in the UK].) 2nd May 2000.

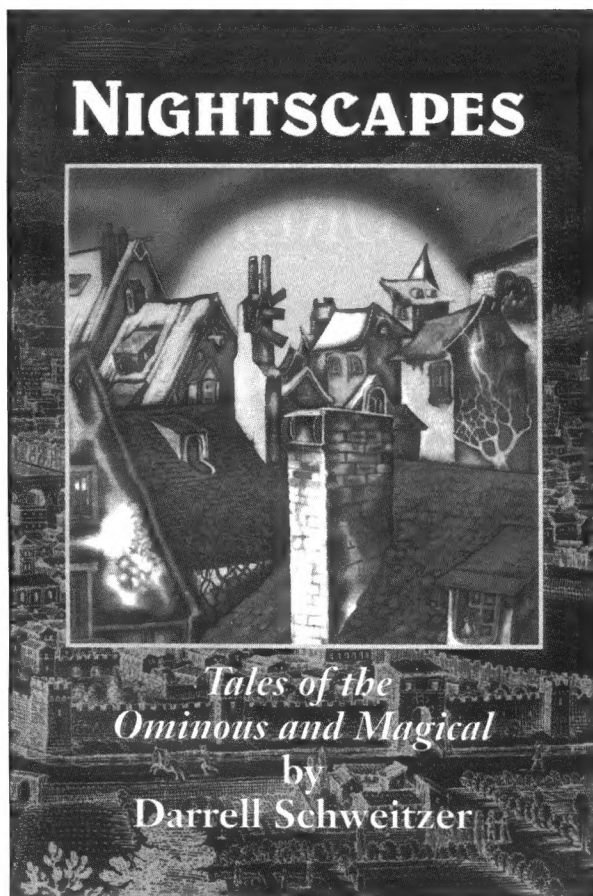
Silverberg, Robert. **Tower of Glass.** "Gollancz SF Collectors' Editions." Gollancz, ISBN 0-575-07097-8, 206pp, C-format paperback, £9.99. (Sf novel, first published in the USA, 1971; from the author's most prolific [and perhaps best] period, this is the one about the building of a Babel-like tower in the Arctic; Harlan Ellison is quoted on the front cover, describing it as "a multi-levelled work of high adventure, considerable tension and social consciousness.") 20th April 2000.

Smyth, Edmund J., ed. **Jules Verne: Narratives of Modernity.** "Liverpool Science Fiction Texts and Studies, 21." Liverpool University Press, ISBN 0-85323-704-2, viii+160pp, C-format paperback, £16.95. (Anthology of critical essays by various

hands on aspects of Verne's fiction; first edition; there is a simultaneous hardcover edition priced at £32.50 [not seen]; contributors include William Butcher [a notable Verne scholar], Arthur B. Evans [co-editor of *SF Studies*] and Terry Hale [known for his *Dedalus* translations], along with others whose names are unfamiliar to us; it looks like an interesting cross-section of views.) Late entry: "10th March" publication (but we don't believe them), received in April 2000.

Stephenson, Neal. **Cryptonomicon.** HarperCollins Perennial, ISBN 0-380-78862-4, 918pp, trade paperback, \$16. (Quasi-sf post-modernist novel, first published in the USA, 1999; billed as a "New York Times bestseller," and plastered all over with glowing review quotes, this big, sprawly, Pynchonesque fantasy-of-history is one of the more unexpected successes of recent years; shortlisted for the Arthur C. Clarke Award, 2000; reviewed by Paul McAuley in *Interzone* 150; according to the accompanying publicity letter, Stephenson is busy writing his next novel, *Quicksilver*, "with a fountain pen.") 1st June 2000.

Sturgeon, Theodore. **More Than Human.** "SF Masterworks, 28." Mil-





lennium, ISBN 1-85798-852-3, 233pp, B-format paperback, cover by Fred Gambino, £6.99. (Sf novel, first published in the USA, 1953; one of the perennials; in the words of M. John Harrison, "The quintessential novel of human self-transformation.") 13th April 2000.

Sudworth, Anne. **Enchanted World: The Art of Anne Sudworth.** Text by John Grant. Paper Tiger, ISBN 1-85585-830-4, 112pp, large-format hardcover, cover by Sudworth, £20. (Fantasy art portfolio; first edition; this is not an artist we've heard of before, but according to the blurb she is "one of the most important painters of fantasy at work today"; she is British, and many of the paintings reproduced here appear to be "straight" landscapes, although interspersed with fantastical imagery.) Late entry: 23rd March publication, received in April 2000.

Taylor, Roger. **The Return of the Sword: The Last Chronicle of Hawklan.** Headline, ISBN 0-7472-5900-3, 473pp, A-format paperback, cover by Mark Harrison, £5.99. (Fantasy novel, first published in 1999 [we didn't see the hardcover]; the final volume of this comparatively unknown but not unprolific British writer's "Chronicles of Hawklan," the previous parts of which were entitled *The Call of the Sword*, *The Fall of Fyorlund*, *The Waking of Orthlund* and *Into Narsindal* – and most of these we did not receive reviews copies of [ah! we remember the days, a decade or so ago, when Headline was a young and hungry company which eagerly sent out not just one but two review copies of everything it published].) 4th May 2000.

Turtledove, Harry. **Colonization: Down to Earth.** Hodder & Stoughton, ISBN 0-340-76868-1, 489pp, hardcover, cover by Fred Gambino, £17.99. (Alternate-history sf novel, first published in the USA, 2000; second part of a follow-up series to the author's four-volume "Worldwar" series.) 4th May 2000.

Turtledove, Harry. **Darkness Descending.** Earthlight, ISBN 0-684-85827-4, 594pp, C-format paperback, cover by Bob Eggleton, £9.99. (Fantasy novel, first published in the USA, 2000; sequel to *Into the Darkness* [1999].) April 2000.

Turtledove, Harry. **Into the Darkness.** Earthlight, ISBN 0-671-02282-2, 607pp, A-format paperback, cover by Geoff Taylor, £6.99. (Fantasy novel, first published in the USA, 1999; this was previously described as the beginning of "a new epic fantasy series... with echoes of the First World War.") 4th April 2000.

Vance, Jack. **Tales of the Dying Earth.** "Fantasy Masterworks, 4." Millennium, ISBN 1-85798-994-5, 741pp, B-format paperback, cover by Geoff Taylor, £7.99. (Fantasy omnibus, first edition in this form; the four constituent books [essentially linked short-story series rather than "novels"], *The Dying Earth*, *The Eyes of the Overworld*, *Cugel's Saga* and *Rhialto the Marvellous*, were originally published in the USA, 1950, 1966, 1983 and 1984; lightly-written, humorous – but stylish, poetic and atmospheric; still most critics' favourite "end of time" saga – and a definite influence on Gene Wolfe's weightier *The Book of the New Sun* and its follow-ups.) 13th April 2000.

Van der Spek, Inez. **Alien Plots: Female Subjectivity and the Divine in the Light of James Tiptree's "A Momentary Taste of Being."** "Liverpool Science Fiction Texts and Studies, 21." Liverpool University Press, ISBN 0-85323-824-3, vi+241pp, C-format paperback, cover by Lucebert, £14. (Feminist-theological study of sf via a particular short story by James Tiptree, Jr [Alice Sheldon, 1916-1987]; first edition; there is a simultaneous hardcover edition priced at £32.99 [not seen]; this looks fairly daunting – in the current dread phrase, it's "theoretically informed" stuff [namedropping, as the Lit-Theorists always do, people like Julia Kristeva] by a Dutch academic critic writing in English; it may be only the second critical book – in the field

of sf studies, at any rate – ever to concentrate on a short story, the first being Samuel R. Delany's *The American Shore: Meditations on a Tale of Science Fiction* by Thomas M. Disch – "Angouleme" [1978].) Late entry: "February" publication (but we don't believe them), received in April 2000.

Vinge, Vernor. **A Deepness in the Sky.** Millennium, ISBN 1-85798-851-5, 757pp, A-format paperback, cover by Chris Moore, £6.99. (Sf novel, first published in the USA, 1999; sequel to *A Fire Upon the Deep* [1991]; reviewed by Paul McAuley in *Interzone* 144.) 13th April 2000.

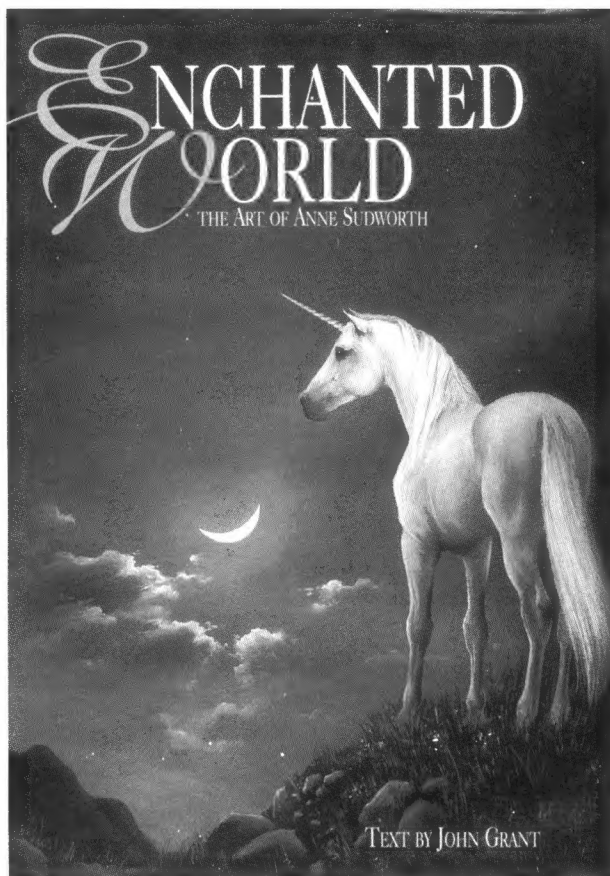
Warrington, Freda. **The Sapphire Throne.** "Book Two of The Jewelfire Trilogy." Earthlight, ISBN 0-7434-0826-8, 527pp, A-format paperback, cover by Mick van Houten, £6.99. (Fantasy novel, first edition; sequel to *The Amber Citadel* [1999].) 3rd April 2000.

Wesley, Kathryn. **The Tenth Kingdom.** HarperCollins Entertainment, ISBN 0-00-710265-8, 421pp, trade paperback, £6.99. (Fantasy TV mini-series novelization, first published in the USA, 2000; it's based on a screenplay by Simon Moore for a Hallmark Entertainment production starring Scott Cohen, Rutger Hauer, Dianne Wiest and others; "Kathryn Wesley" is transparently a pseudonym of Kristine Kathryn Rusch and her husband Dean Wesley Smith.) 2nd May 2000.

Wolfe, Gene. **Litany of the Long Sun: Nightside the Long Sun and Lake of the Long Sun.** Tor/Orb, ISBN 0-312-87291-7, 544pp, trade paperback, \$16.95. (Sf omnibus, first edition; it contains the first two novels in the author's tetralogy "The Book of the Long Sun" [1993-1996], which was hailed by Paul McAuley in *Interzone* as further proof that "Wolfe may be the best science-fiction writer in the world.") 5th April 2000.

Also Received:

Spectrum SF 2. Edited by Paul Fraser. Spectrum Publishing [PO Box 10308, Aberdeen AB11 6ZR], ISSN 1468-3903, 160pp, B-format paperback, £3.99. (Quarterly British sf magazine in book form, with something of the feel of an anthology rather than a magazine; it contains new stories by Stephen Baxter & Eric Brown, Barrington J. Bayley, Keith Brooke, Eric Brown [again, solus], Jack Deighton and Stephen Palmer, plus part two of a serialized novel by Keith Roberts, a short editorial, and brief book, magazine and film reviews; cleanly produced, with a non-pictorial colour cover; well worth a look.) April 2000.



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FANZINES WANTED. Vector no. 25, 27, 34, 35, 42, 48, 71. Zenith no. 5, 6, 10 (also Zenith no. 2, no. 3 from 1940s), Renaissance no. 3. Also seeking Eric Frank Russell: *Our Sentinel in Space* bibliography by Stephensen-Payne (1st ed. 1986, 2nd ed. 1988, not updated 2nd 1989). J. L. Ingham, 41 Rosemary Avenue, Lower Earley, Reading RG6 5YQ. Tel. 0118-986 9071.

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THE DRUNE by Jane Palmer, published by Swift in September 1999, will now be available from Dodo Books, 77 Strathmore Avenue, Luton LU1 3QN. Tel./fax: 01582 733663. £5.99 inc p&p. www.hardcafe.co.uk/dandi_illustrator

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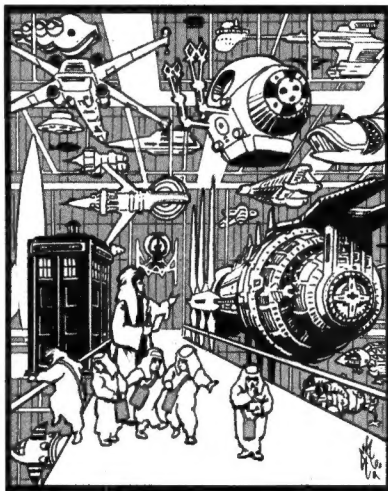
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COMING NEXT MONTH

Welcome back, Barrington J. Bayley and John Meaney, both of whom have been too long away from these pages. (The latter is also interviewed, by Molly Brown, and it's one of the most idiosyncratic interviews we've ever read.) Also, we have a rather delightful new story by Chris Beckett, plus other good stories by other talented writers, and all our usual features and reviews. So look out for the August issue of *Interzone*, on sale in July.

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